WASTE SOILS RECOVERY FACILITY, MIDLETON, CO. CORK

Natura Impact Statement

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Facility, Midleton, Co. Cork
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1 INTRODUCTION

Following a screening for Appropriate Assessment exercise[1], it cannot be excluded on the basis of objective scientific information that certain aspects of the permitted waste soils recovery facility works at a site referred to as Midleton Quarry at Midleton, Co. Cork will have a likely significant effect on the following European Sites:

- Cork Harbour SPA
- Great Island Channel SAC

Accordingly, this Natura Impact Statement (NIS) has been prepared by Karen Banks of Greenleaf Ecology on behalf of Roadstone Limited to consider whether the permitted waste soils recovery facility works will have an adverse effect on the integrity of the aforementioned European sites, either alone or in combination with other projects or Plans. Where there are adverse impacts, the NIS assesses the potential mitigation of those impacts.

This exercise considers the permitted waste soils recovery facility works at Midleton Quarry, Midleton, Co. Cork individually and in combination with other relevant projects or Plans and has been undertaken in view of best scientific knowledge and the conservation objectives of the European sites concerned. This NIS will inform the Appropriate Assessment of the permitted waste soils recovery facility works at Midleton Quarry at Midleton, Co. Cork by the Competent Authority, which is the Environmental Protection Agency (EPA).

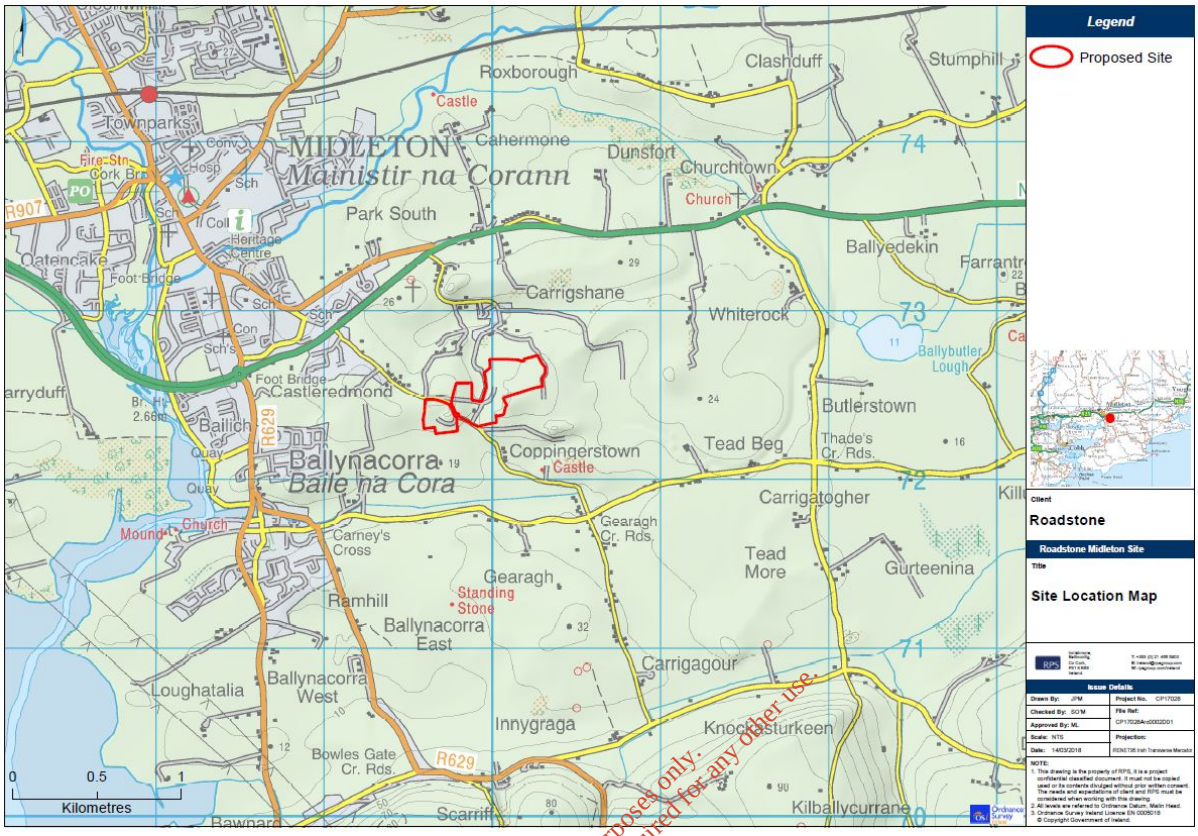
This report is prepared in accordance with the requirements of part XAB of the Planning and Development Act, 2000 – 2019, which transposes certain aspects of Articles 6(3) and 6(4) of the Habitats Directive (92/43/EEC).

1.1 Site Location

The site is located in the townlands of Carrigshane and Castleredmond, approximately 2.1km south-east of the town of Midleton, as shown below. The site is located to either side of the tertiary road L3626.

[1] RPS (2019) *Screening for Appropriate Assessment Report: Waste Soils Recovery Facility, Midleton* for Roadstone Ltd and Cork County Council and EPA (2020) Waste Licence Application: Appropriate Assessment Screening Determination

Figure 1-1: Site Location



2 PROJECT DESCRIPTION

The development, which is already permitted (local authority planning reference No. 19/04719), will be a waste soils recovery facility. It comprises the importation of approximately 1.4Mm^3 of inert soil and stones material to fill quarry voids. In this regard, the purpose of the development is twofold. The first is to restore the site to in terms of its landform and agricultural use, to a state comparable to its nature prior to extraction activities commencing at the site. The second is to cater to a recognised shortage of waste disposal facilities for construction waste.

Following restoration, the land use will be agricultural.

The overall application site comprises 15.7 hectares approx., which extends to include all elements of the development including ancillary works areas such as welfare and operational facilities. The full extent of the permitted soils recovery development comprises the following structures and works:

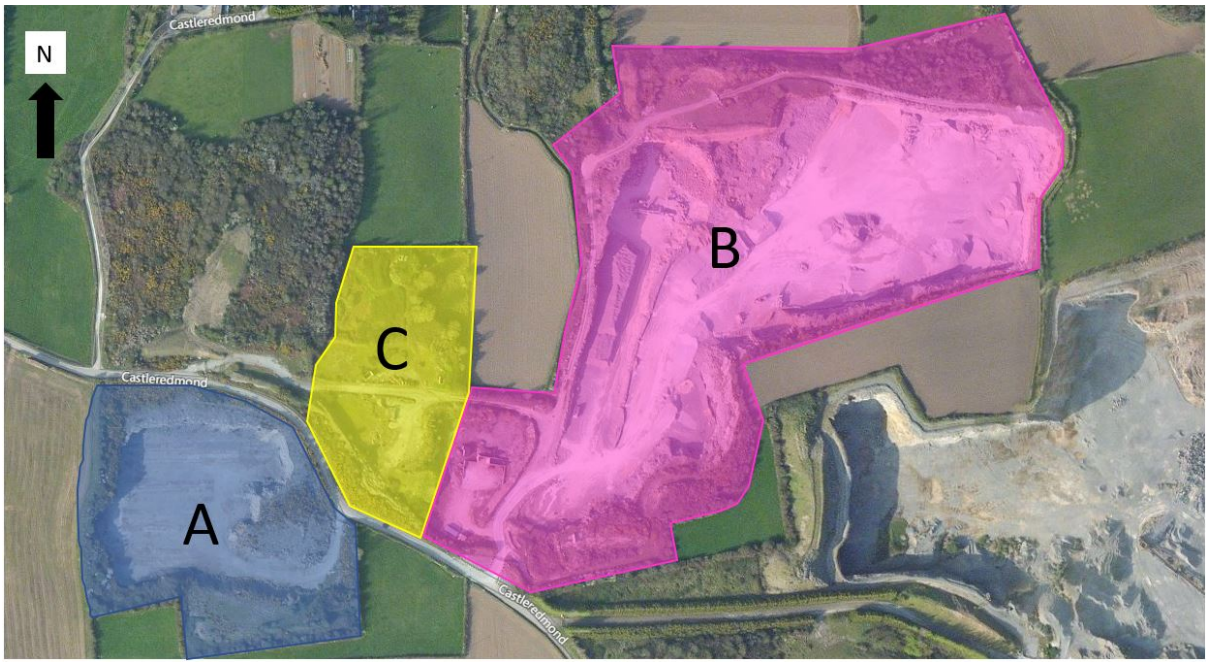
- Provision of connecting track between Midleton and Coppingerstown Quarry to include provision of hardstanding and car parking spaces.
- Drainage of the connecting track and hardstanding area to a soakpit via a fuel / oil interceptor.
- Provision of a quarantine area / shed.
- Installation of weighbridge, wheelwash, site office and welfare facilities.
- Removal of hedgerow / scrub and stone walls to northwest of entrance to Zone A, and subsequent installation of new post and chainlink fencing; lowering of hedgerow line to southeast of entrance to Zone A (as part of ongoing maintenance works).
- Infill quarry voids of approx. 9ha hectares with inert soils and stones material; total volume estimate of 1.4Mm^3.
- Final Landscaping / restoration of infill areas.
- Final removal of hardstand and site facilities (when extraction at neighbouring Coppingerstown Quarry also complete).

2.1 General Scope of Project

The overall site area comprises 15.7ha. Of this, approximately 9ha are permitted for extraction. Thus, the infilling permitted under this application also relates to approximately 9ha. The other ancillary elements identified above are within the wider 15.7ha site.

For ease of reference in the reporting, the site has been subdivided into three separate and identifiable zones, Zones A, B and C. These are identified on **Figure 2.1** below.

Figure 2-1: Site Zoning



2.1.1 Nature of Imported Material

The nature of the material to be imported to the subject site comprises inert soil and stones which fall under the List of Waste Category of 17 05 04[2]. This material will largely originate from excavations to accommodate large scale infrastructural or other construction works. Material accepted at the site will be subject to acceptance criteria summarised in **Section 2.1.4**.

2.1.2 Phasing

All extraction activities have ceased in Zone A and therefore importation of material will commence in this location. Once sufficient material is imported to fill the majority of the void to the proposed final profile levels, the focus will shift towards final restoration of the site with appropriate levels of subsoils and topsoils and landscaping. It is envisaged that the finished profile and landscaping will tie Zone A in with the surrounding landscape.

Extraction is currently ongoing in Zone B and it is envisaged that once the permitted volumes are exhausted, that extraction activities will then focus on Zone C allowing importation and backfilling of Zone B. Finally, Zone C shall be filled following completion of all permitted extraction.

Landscaping and restoration of the furthermost areas of Zone B will be possible while extraction or importation works are underway in Zone C. Due to the requirement for access, however, to the overall site and to provide sufficient circulation and working space for ongoing extraction/ importation in Zone C, it is likely that landscaping for much of Zone B and all of Zone C will commence once all importation activities have been completed in order to enable a coherent approach and appropriately restore both zones.

[2] Environmental Protection Agency, (2015) *Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-hazardous*. Dublin: Environmental Protection Agency

2.1.3 Filling Approach

The EPA *Guidance on Waste Acceptance Criteria at authorised soil recovery facilities* (EPA, 2020) sets out a high-level approach towards acceptance of soils material at such licensed facilities and any testing requirements recommended to be carried out. The guidance document states that material should only be accepted from the following types of source sites:-

Table 2-1: Waste Acceptance

Source Site Type	Suitability for Acceptance
Greenfield Sites:	Acceptable, subject to meeting agreed Waste Acceptance Criteria.
Non-greenfield sites where the risk of contamination from chemical or solid materials is low:	Acceptable, subject to meeting agreed Waste Acceptance Criteria
Non-greenfield sites where there is an increased risk of contamination from chemicals or solid materials:	Not acceptable – such materials should generally not be accepted at soil recovery facilities. Waste soil and stone from such sites should be transferred to an appropriately licensed landfill or recovery facility.

The guidance document also suggests procedures and methodologies for waste characterisation, soil trigger levels and groundwater monitoring. There is a network of new monitoring wells at the site. It is proposed under the current application to undertake regular monitoring for groundwater levels and groundwater quality at six locations. The frequency and reporting procedures will be determined by the EPA under the waste licence application.

Waste acceptance procedures based on the EPA guidance are proposed for the site and are summarised in **Section 2.1.4**.

2.1.4 Filling Procedures

Waste acceptance criteria and procedures at the site will be in accordance with the guidance set out in the EPA *Guidance on Waste Acceptance Criteria* at authorised *Soil Recovery Facilities* and as specified in due course by the EPA in a waste licence. The guidance document states that material should only be accepted from the following source sites identified in **Table 2.2**.

Table 2-2: Waste Acceptance

Type of Source Site	Suitability for Acceptance
Greenfield Sites	Acceptable, subject to meeting agreed Waste Acceptance Criteria.
Non-greenfield sites where the risk of contamination from chemical or solid materials is low:	Acceptable, subject to meeting agreed Waste Acceptance Criteria
Non-greenfield sites where there is an increased risk of contamination from chemicals or solid materials:	Not acceptable – such materials should not be accepted at soil recovery facilities. Waste soil and stone from such sites should be transferred to an appropriately licensed landfill or recovery facility.

All hauliers must hold a valid waste collection permit which shall be presented to the facility prior to transportation of material onto site. Appropriate competent persons shall carry out invasive species risk assessments and waste characterisation. Waste Acceptance Criteria (WAC) results and all site investigation and laboratory reports (to comply with criteria below) shall be presented to the facility for review prior to material acceptance.

Following testing as per the criteria noted at **Section 2.1.5** below, if the material is deemed suitable for acceptance, then the customer will be informed in writing and notification will be given for presentation at on-site verification. Additionally, a Roadstone New Site Notification sheet must be completed by a competent person and reviewed by Roadstone and Roadstone chain of custody booklets shall be issued to site.

In addition to the criteria per the EPA guidance, an invasive species risk assessment will be carried out by appropriately skilled persons and site visits will be carried out to source sites if necessary. Representative spot samples will be taken of waste accepted and sent to laboratories if necessary for further analysis.

All loads in and out of the facility shall be weighed and issued with a docket providing the type of waste and customer details. A Waste Intake Log Sheet shall be filled out by the weighbridge clerk and signed by the driver for all loads in and out. It shall include details such as the date and time, waste permit no., vehicle registration no., name of haulier, net weight, comments, certificate of conformity no. and signatures of both the driver and clerk.

Imported waste shall not be processed in any capacity on site. If material arrives to site and is deemed to be unsuitable for depositing in the quarry void it will be refused, or if necessary to retain that material at a quarantine area until such a time that it is ready to be transported elsewhere for disposal as appropriate.

2.1.5 Waste Acceptance Criteria

The following criteria will be applied at the site to ensure waste acceptance at the site in line with the requirements of the EPA to accept soil and stones (LoW code 17 05 04). These procedures will ensure that only suitable material is actually accepted and deposited in quarry voids. In addition, these procedures may be subject to agreement with the EPA under a condition of any Waste Licence granted; therefore, the procedures outlined here may be subject to change.

Greenfield Soil and Stone

A Letter of suitability for the first 5,000 tonnes of material received, and a further letter of suitability for each subsequent 5,000 tonnes of material received will be required.

Each letter of suitability shall be signed by a suitably qualified person and shall, at a minimum, state the following:-

- The waste is greenfield soil and stone.
- A description of the source and nature of the soil and stone.
- The location of the source of the soil and stone (including a map showing the source site boundary).
- The material is suitable for use within the facility.
- The material will not cause environmental pollution at the facility.

The EPA guidance document states that there is no requirement for testing greenfield soil and stone, unless directed by the Agency. However, it is advisable that the suitably qualified person relies on soil test results to confirm the greenfield status of the source site before signing the letter of suitability. When the material arrives at the soil recovery facility, a visual check is required to verify that the material is greenfield soil and stone.

Non-Greenfield Soil and Stone

Prior to accepting material from each individual source site, the Applicant shall obtain information on the past use of the site and shall reject non-greenfield sites where soil or groundwater contamination has been identified or where there is an increased risk of contamination being present. Soil and stone shall not be accepted from sites where activities in the past have involved the manufacture or storage of hazardous substances e.g. chemical manufacturing facilities, oil storage facilities, retail filling stations.

Basic characterisation, compliance testing and on-site verification shall be undertaken, as outlined in **Table 2.3** below and / or as revised by licence requirements.

Table 2-3: Waste Acceptance Criteria per EPA Guidance

Amount of Material	Testing Requirement	Frequency of Testing/Location of Sampling
Greater than 2,000 tonnes from a single source	Basic characterisation *	To be carried out off-site prior to agreeing acceptance of the waste at the facility.
	Compliance testing *	One representative sample shall be analysed for every 2,000 tonnes of material received at the facility. A portion of each sample shall be retained on site for three years and shall be available for inspection/analysis by the Agency.
	On-site verification * *	Every load received at the facility
Less than 2,000 tonnes from a single source	Basic characterisation *	Sampling shall be undertaken at the facility prior to the use of material as backfill. At least one representative sample shall be collected from every 2,000 tonnes of material from the collective of single sources, each of which is less than 2,000 tonnes * * * A portion of each sample shall be retained on site for three years and shall be available for inspection/analysis by the Agency.
	On-site verification *	Every load received at the facility

Notes:
* This constitutes a thorough determination, according to standardised analysis and behaviour testing methods, of the short and long-term leaching behaviour and/or characteristic properties of the waste. Parameters and trigger levels are to be agreed with the Agency.
* * Rapid check methods (e.g. visual inspection) to confirm that a waste is the same as that which has been subjected to compliance testing and that which is described in any accompanying documents.
* * * It is recommended that waste in this category is placed in the quarantine area until sampling is completed and the results are available to determine suitability for acceptance.

Soil Trigger Levels

Contaminant concentrations within the soil and stone must comply with soil trigger levels to be agreed with the EPA. They must focus on the requirement for material accepted at the facility to be uncontaminated and will be used for basic characterisation and compliance testing.

2.1.6 Lifetime of the Development

The applicant has received permission with a duration of 18 no. years which allows for approximately 15 no. years of importation and 3 no. years of monitoring.

2.1.7 Ancillary Buildings and Facilities

The ancillary buildings and facilities required for the operation of the soils recovery facility are listed below. These are temporary facilities only to be provided for the duration of the soils recovery activities and will be removed from site as part of the final restoration works. Some of these items are

already in place for the quarrying activity and will be utilised for and retained for the duration of recovery activities also.

- Site security facilities.
- Site office / staff welfare facilities.
- New wheelwash and weighbridge.
- Quarantine area for any imported material suspected of being contaminated or unsuitable for acceptable at the facility. This will comprise of a covered concrete slab area.

2.1.8 Surface Water Drainage

Surface water drainage will be installed adjacent to the new wheel wash and weighbridge. The surface water will pass through a petrol interceptor before flowing to a stone filled soakaway.

2.1.9 Restoration

The end use of this site will be agricultural use and the land profile will be restored to approximately what it would have been prior to the commencement of extraction activities. It is proposed to profile the imported soils material according to a site-specific landscape plan.

In order to provide an economical and practical land package for modern day agricultural use, it is not proposed to restore field boundaries to those represented in historical mapping. Many of the pre-existing fields are of a small size and are unsuitable for the large machinery required to operate a modern sustainable farming enterprise.

Screening berms were previously provided to the existing quarrying activities as required by their planning permissions. In general, these will be retained in situ until infill is complete. This will ensure ongoing protection of the visual amenities of the area. As infill is complete the original topsoil stored in these bunds will be spread over the infill area.

2.2 Study Area and Zone of Influence

The permitted works comprise a waste soils recovery facility located in the townlands of Carrigshane and Castleredmond, approximately 2.1km south-east of the town of Midleton (for location map see **Figure 1.1**). The site covers c.15.7ha.

Determination of this project's Zone of Influence (ZoI) was achieved by assessing all elements of the permitted project against the ecological receptors within the permitted project footprint, in addition to all ecological receptors that could be connected to and subsequently impacted by the permitted project through impact pathways. To this end, the zone of influence extends outside of the permitted waste soils recovery works footprint to include ecological receptors connected to the project through overlap / intersection, proximity and connectivity through features such as waterbodies.

The site and Cork Harbour SPA and Great Island Channel SAC are all located in the Midleton groundwater body (see **Figure 4.1 and Section 5.3.2**).

2.3 Statement of Competence

This NIS has been prepared by Karen Banks. Karen is an ecologist with 14 years' experience in the field of ecological assessment. She holds a BSc (Hons) in Environment and Development from Durham University, and is a full member of the Chartered Institute of Ecology and Environmental Management. In her career as an ecologist Karen has undertaken Appropriate Assessments (AA) covering the transport, energy and land use sectors, with work including assessment of Plans at the national, regional and local level; and numerous AAs of projects.

2.4 NIS Objectives

This NIS considers impacts to Cork Harbour SPA and Great Island Channel SAC, focusing on potential impacts such as the release of water borne pollutants to groundwater underlying the permitted site which provides connectivity with Cork Harbour SPA and Great Island Channel SAC.

3 METHODOLOGY

3.1 Legislative Background for Appropriate Assessment

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, better known as "The Habitats Directive", provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000. As defined under the Habitats Directive (Article 3(1)) Natura 2000 is a European ecological network composed of sites hosting the natural habitat types listed in Annex I and habitats of the species listed in Annex II, shall enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range.

In Ireland, these sites are designated as European sites and include SPAs, established under the EU Birds Directive (79/409/EEC, as codified by 2009/147/EC) for birds and SACs, established under the Habitats Directive 92/43/EEC for habitats and species.

The Habitats Directive has been transposed into Irish law by Part XAB of the Planning and Development Act, 2000 - 2019 and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/2011) as amended.

Article 6(3) of the Habitats Directive sets out the decision-making tests for plans and projects likely to have a significant effect on or to adversely affect the integrity of European sites. Article 6(3) establishes the requirement for Appropriate Assessment (AA):

Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In 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.

Both EU and national guidance exists in relation to Member States fulfilling their requirements under the EU Habitats Directive, with particular reference to Article 6(3) and 6(4) of that Directive. The methodology followed in this report to inform the assessment has had regard to the following legislation and guidance listed in **Section 3.2**:

- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (also known as the 'Habitats Directive');
- Council Directive 2009/147/EC on the conservation of wild birds, codified version, (also known as the 'Birds Directive');
- The European Communities (Birds and Natural Habitats) Regulations 2011 to 2015; and
- The Planning and Development Act 2000-2019.

3.2 Stages of the Appropriate Assessment

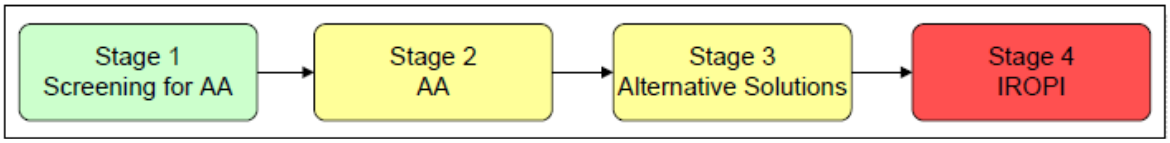
Article 6(3) & (4) of the Habitats Directive defines a step-wise procedure where plans or projects are considered. The Department of the Environment, Heritage and Local Government guidelines[3] (DoELHG, 2009, rev 2010) outline the European Commission's methodological guidance (EC, 2002)

[3] Now the Department of Housing Planning Community and Local Government

promoting a four-stage process to complete the AA and outline the 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 four stages are summarised diagrammatically in **Figure 3-1**. Stages 1-2 deal with the main requirements for assessment under Article 6(3). Stage 3 may be part of the Article 6(3) Assessment or may be a necessary precursor to Stage 4. Stage 4 is the main derogation step of Article 6(4).

Figure 3-1: Four Stages of Appropriate Assessment[4]



Stage 1 Appropriate Assessment

Stage 1 AA comprises the Screening process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3) as follows:

i. whether a plan or project (in this instance the permitted Waste Soils Recovery Facility) is directly connected to or necessary for the management of the European sites, and

ii. whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on the European sites in view of their conservation objectives.

If the effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2 (AA).

Stage 2: Appropriate Assessment

The aim of the stage 2 AA process is to identify any adverse impacts that the plan or project might have on the integrity of relevant European Sites. As part of the assessment, a key consideration is 'in combination' effects with other plans or projects. Where adverse impacts are identified, mitigation measures can be proposed that would avoid, reduce or remedy any such negative impacts and the plan or project can be amended and/or conditions and restrictions imposed.

This NIS informs Stage 2 of the AA process and determines if the project is likely to affect the integrity (structure and function) of European sites. As the screening process identified that potential impacts to Cork Harbour SPA and Great Island Channel SAC are unknown, uncertain or cannot be ruled out without further assessment, then an AA is required.

The NIS represents a detailed, targeted assessment of the nature and potential significance of direct and indirect impacts arising from the permitted project. An assessment of cumulative impacts (both from the project objectives, and other policies, plans and programmes) is also completed as part of the NIS. The NIS also incorporates best practice and mitigation measures to eliminate potential adverse impacts.

This NIS has been prepared having regard to the guidance and legislation set out hereunder.

- Department of the Environment, Heritage and Local Government (DoEHLG) (2009, rev 2010a), Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities.

[4] IROPI – Imperative Reasons for Overriding Public Interest

- Department of the Environment, Heritage and Local Government (DoEHLG, 2010b), Department of Environment Heritage and Local Government Circular NPWS 1/10 and PSSP 2/10 on Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities.

- European Commission (2018), Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg.

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

- European Commission (2002), Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg.

- European Commission (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the Commission. Office for Official Publications of the European Communities, Luxembourg.

- National Roads Authority (NRA) (now Transport Infrastructure Ireland (TII)) (2009), Guidelines for the Assessment of Ecological Impacts of National Road Schemes Rev. 2.

- European Commission (2013), Interpretation Manual of European Union Habitats. Version EUR 28.

- European Commission (2006), Nature and biodiversity cases: Ruling of the European Court of Justice. Office for Official Publications of the European Communities.

4 EUROPEAN SITES WITHIN PROJECT ZONE OF INFLUENCE

The findings of the AA Screening Determination (EPA (2019), see **Appendix A**) concluded that two European sites are located within the ZoI of the proposed waste soils recovery facility, namely Cork Harbour SPA and Great Island Channel SAC. Please refer to the Screening for Appropriate Assessment Report (RPS (2019) see **Appendix B**) for details of European sites that are located within 15km of the waste soils recovery facility site but have been identified as being outside of the Zone of Influence (ZoI).

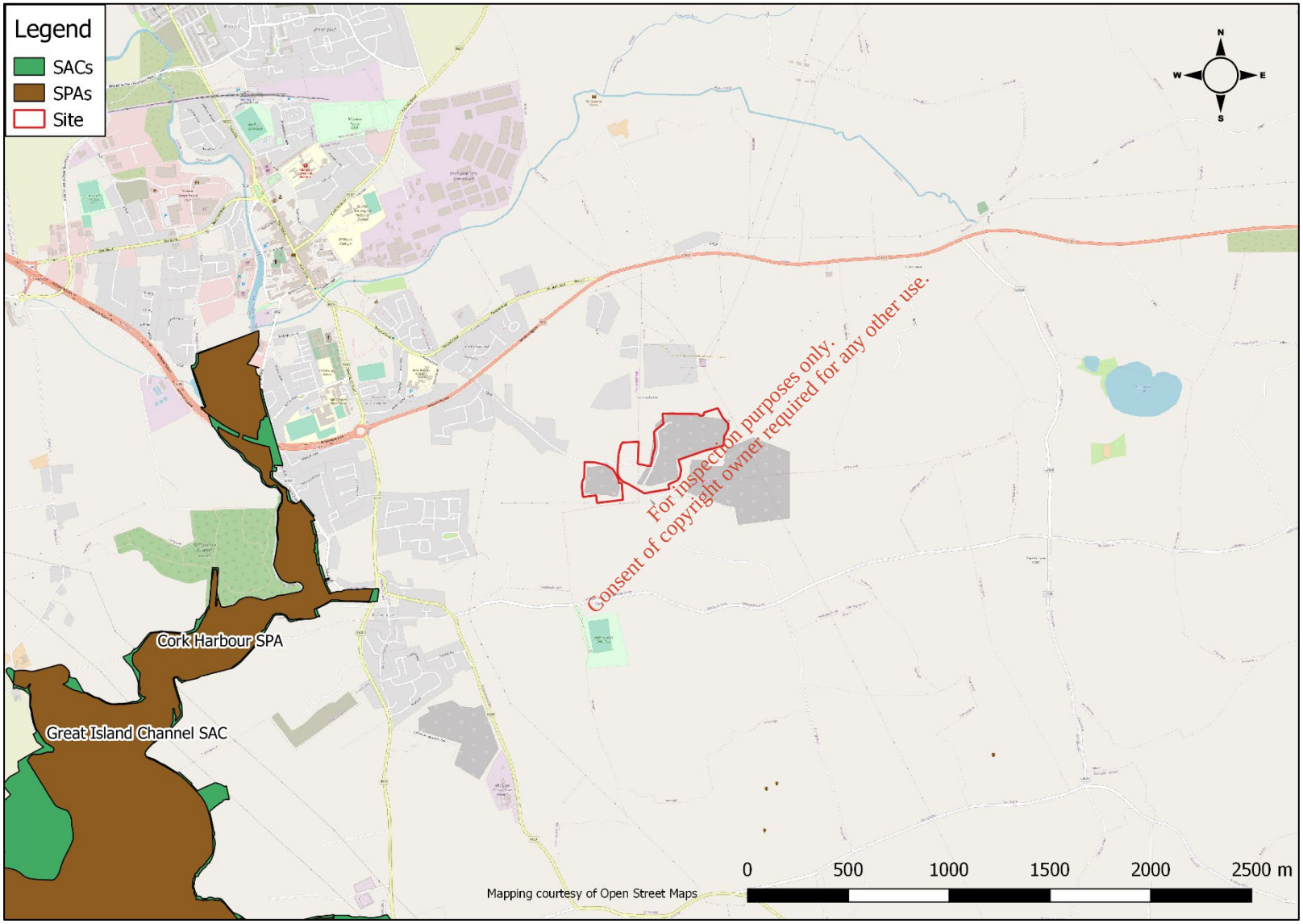
Table 4.1 lists the European sites within the ZoI of the permitted waste soils recovery facility. **Figure 4.1** outlines the location of these European sites relative to the permitted waste soils recovery facility works footprint.

Table 4-1: Connectivity of European Sites Identified as being within the Zone of Influence of the Permitted Waste Soils Recovery Facility, Midleton

European Site	Site Code	Approximate Distance (km's) from the Project[5]	Connectivity
Great Island Channel SAC	001058	1.11	There is no habitat or surface water connectivity. However, the permitted site and this SAC are both situated in the Midleton groundwater body.
Cork Harbour SPA	004030	1.13	There is no habitat or surface water connectivity. However, the permitted site and this SPA are both situated in the Midleton groundwater body.

[5] Measured "as the crow flies"

Figure 4-1: European Sites within the Zone of Influence of the Permitted Waste Soils Recovery Facility, Midleton



4.1 European Sites Relevant to the Stage 2 Appropriate Assessment

4.1.1 Great Island Channel SAC

The Standard Data Form (NPWS, 2017) describes Great Island Channel SAC as comprising the north-eastern part of Cork Harbour. It includes all of the Great Island Channel, the intertidal areas between Fota Island and Little Island, and also the estuary of the Dungourney and Owennacurra Rivers as far as Midleton. The North Channel is on average 1 km wide but extends for about 9 km from east to west. The area is well sheltered and the intertidal sediments are predominantly fine muds. In addition to the estuarine habitats, the site includes some wet grassland areas which are used by roosting birds, as well as some broad-leaved woodland at Fota Island. Compared to the rest of Cork Harbour, the Great Island Channel is relatively undisturbed, with aquaculture the main activity.

The site is of ecological importance for its examples of intertidal mud and sand flats and Atlantic salt meadows of the estuarine type. Both habitats are fairly extensive in area and of moderate to good quality. The site has high ornithological importance, supporting regularly c.50% of the wintering waterfowl of Cork Harbour. Significant proportions of the internationally important populations of *Limosa limosa* and *Tringa tetanus*, which winter in Cork Harbour, utilise the site and it supports nationally important populations of a further 12 species, including *Pluvialis apricaria* and *Limosa lapponica*, both listed on Annex I of the EU Birds Directive.

4.1.2 Qualifying Interests

The importance of a site designated under the Habitats Directive is defined by its qualifying features or interests. Qualifying interests for any European Site are listed on a pro forma, called the Natura 2000 standard data form, which forms the basis of the rationale behind designation, and informs the Conservation Management Plan for targeted management and monitoring of key species and habitats.

Qualifying interests for Great Island Channel SAC are given in **Table 4.2**, along with the conservation status and specific sensitivities and main threats relevant to each feature. Information on the conservation status for each habitat within the SAC was extracted from the Natura 2000 Standard Data Form on the NPWS website http://www.npws.ie/protectedsites/. This information provides specific details on the conservation status of each habitat within the SAC. The environmental sensitivities have been derived from *The Status of EU Protected Habitats and Species in Ireland*[6].

Table 4-2: Conservation Status and Main Threats to the Qualifying Interests of Great Island Channel SAC

Annex I Habitat	Conservation Status at Great Island Channel SAC[7]	Environmental Sensitivity/ Main Threats (Ranked High to Medium)
Mudflats and sandflats not covered by seawater at low tide (1140)	B= Good conservation status.	Pollution to surface waters (limnic & terrestrial, marine and brackish (H01) Fishing and harvesting aquatic resources (F02) Bottom culture (F01.03) Suspension culture (F01.02)
Atlantic salt meadows (Glauco-Puccinellietalia maritimae) (1330)	B= Good conservation status.	Intensive cattle grazing (A04.01.01) Intensive sheep grazing (A04.01.02) Paths, tracks, cycling tracks (D01.01)

[6] NPWS (2013): The Status of EU Protected Species and Habitats in Ireland. Habitats Assessment Volume 2. Version 1.1. Department of Arts, Heritage and Gaeltacht.

[7] Natura 2000 Standard Data Forms version date September 2017

Annex I Habitat	Conservation Status at Great Island Channel SAC[7]	Environmental Sensitivity/ Main Threats (Ranked High to Medium)
		Erosion (K01.01) Invasive non-native species (I01)

4.1.2.1 Threats and Pressures to Great Island Channel SAC

The Natura Standard Data Form for Great Island Channel SAC identifies the most important threats and pressures (high and medium) on this site as detailed in **Table 4.3**.

Table 4-3: Negative Threats, Pressures and Activities with impacts to the Great Island Channel SAC

Threats and Pressures (Code)[8]	Threat Type	Rank[9]	Inside(i) / Outside (o) / Both (b)
E01	Urbanised areas, human habitation	H	o
D01.02	Roads, motorways	H	i
F01	Marine and freshwater aquaculture	H	i
A08	Fertilisation	M	o
A04	Grazing	M	i
K02.03	Eutrophication (natural)	M	i
J02.01.02	Reclamation of land from sea, estuary or marsh	H	i
I01	Invasive non-native species	M	i

4.1.3 Cork Harbour SPA

The Standard Data Form (NPWS, 2017) describes Cork Harbour as a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owenacurra. The site comprises the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy Estuary, Whitegate Bay and the Rostellan inlet. Owing to the sheltered conditions, the intertidal flats are often muddy in character. Salt marshes are scattered through the site and these provide high tide roosts for the birds. Otherwise, birds roost on stony shorelines and in some areas fields adjacent to the shore. Some shallow bay water is included in the site. Cork Harbour is adjacent to a major urban centre and a major industrial centre.

Cork Harbour is an internationally important wetland site, regularly supporting in excess of 20,000 wintering waterfowl, for which it is amongst the top five sites in the country. It supports an internationally important population of *Tringa totanus*. A further 15 species have populations of national importance, with particularly notable numbers of *Tadorna tadorna* (9.6% of national total), *Anas clypeata* (4.5% of total), *Anas acuta* (4.2% of total) and *Phalacrocorax carbo* (4.1% of total) occurring. It has regionally important populations of *Pluvialis apricaria* and *Limosa lapponica*. Passage waders are regular, including *Philomachus pugnax* and *Tringa erythropus*. It is an important site for gulls in winter and autumn, especially *Larus canus* and *Larus fuscus*. The site provides both feeding and roosting areas for the waterfowl species. The quality of most of the estuarine habitats is good. The wintering birds have been well-monitored since the 1970s. The site has a breeding colony

[8] Threat code sourced from Natura 2000 data form and follows reference list provided on threats, pressures and activities for European sites

[9] Threat, pressure and impact ranking provided on Natura 2000 data form: H – High, M – Medium, L - Low

of *Sterna hirundo* which is of national importance. The colony is monitored annually and the chicks ringed.

4.1.4 Conservation Condition of Special Conservation Interests for Cork Harbour SPA

The Conservation Objectives Supporting document for Cork Harbour SPA (NPWS, 2014a) provides a review of the site conservation condition and population trends for Cork Harbour SPA with regard to species' all-Ireland and international trends (see **Table 4.4**). All-Ireland trends follow Crowe & Holt (2013) while International trends follow Wetlands International (2012).

Table 4-4: SCI Species of Cork Harbour SPA – Current Site Conservation Condition

Special Conservation Interests	BoCCI Category[10]	Site Population Trend[11]	Site Conservation Condition	Current All-Ireland Trend[12]	Current International Trend[13]
Shelduck	Amber	- 39	Unfavourable	Stable	Increasing
Wigeon	Red	- 27	Unfavourable	Declining	Stable
Teal	Amber	- 1	(Intermediate) Unfavourable	Stable	Increasing
Pintail	Red	- 65	Highly Unfavourable	Increasing	Increasing
Shoveler	Red	- 75	Highly Unfavourable	Increasing	Increasing
Red-breasted Merganser	Green	- 51	Highly Unfavourable	Stable	n/c
Little Grebe	Amber	+ 16	Favourable	Stable	Increasing
Great Crested Grebe	Amber	- 46	Unfavourable	Declining	Declining?
Cormorant	Amber	- 50	Highly Unfavourable	Stable	Increasing
Grey Heron	Green	- 15	(Intermediate) Unfavourable	Stable	Increasing
Oystercatcher	Amber	- 20	(Intermediate) Unfavourable	Stable	Declining
Golden Plover	Red	+ 21	Favourable	Declining	Declining
Grey Plover	Amber	- 68	Highly Unfavourable	Declining	Declining?
Lapwing	Red	- 68	Highly Unfavourable	Declining	Stable
Dunlin	Red	- 49	Unfavourable	Declining	Stable
Black-tailed Godwit	Amber	+ 16	Favourable	Increasing	Increasing
Bar-tailed Godwit	Amber	+ 41	Favourable	Stable	Increasing
Curlew	Red	-44	Unfavourable	Declining	Declining

[10]After Colhoun & Cummins, 2013

[11]Site population trend analysis

[12] All-Ireland trend - where a species is deemed to be increasing or declining if the annual rate of change is equal to or greater than 1.2% (after Crowe & Holt, 2013)

[13]Current international trend after Wetlands International (2012).

Special Conservation Interests	BoCCI Category[10]	Site Population Trend[11]	Site Conservation Condition	Current All-Ireland Trend[12]	Current International Trend[13]
Redshank	Red	-29	Unfavourable	Stable	Stable/Increasing?
Black-headed Gull	Red	- 53	Highly Unfavourable	n/c	n/c
Common Gull	Amber	- 89	Highly Unfavourable	n/c	n/c
Lesser Black-backed Gull	Amber	- 83	Highly Unfavourable	n/c	n/c

Table 4-4 also shows the relationship between a species' long-term site trend and the current All-Ireland trend for the period 1999/00 to 2010/11. The colour coding used represents the following cases:-

- Grey – un-assessed;
- Green – species whose populations are stable or increasing at both site level and all-Ireland level;
- Beige – species whose populations are declining at both site level and all-Ireland level. Therefore, there is a potential for factors at a larger spatial scale to be influencing the observed trend at site level;
- Orange - species whose populations are exhibiting a 1.0 – 24.9% decline at site level but are stable or increasing at all-Ireland level;
- Pink - species whose populations are exhibiting a 25.0 – 49.9% decline at site level but are stable or increasing at all-Ireland level; and
- Red - species whose populations are exhibiting a decline of >50.0% at site level but are stable or increasing at all-Ireland level.

The pink and red categories display where populations are stable or increasing at All-Ireland level, but where significant declines are observed at a site level within Cork Harbour SPA. Leech *et al*. (2002) suggests that site-based management issues may be responsible for such patterns in the observed declining site population trends.

4.1.4.1 Threats and Pressures to Cork Harbour SPA

The Natura Standard Data Form for Cork Harbour SPA identifies the most important threats and pressures (high and medium) on this SPA as detailed in **Table 4.5**.

Table 4-5: Negative Threats, Pressures and Activities with impacts to Cork Harbour SPA

Threats and Pressures (Code)	Threat Type	Rank	Inside (i) / Outside (o) / Both (b)
D01.02	Roads, motorways	H	o
G01.02	Walking, horse-riding and non-motorised vehicles	M	i
F02.03	Leisure fishing	M	i
D03.01	Port areas	H	o
A08	Fertilisation	M	o

Threats and Pressures (Code)	Threat Type	Rank	Inside (i) / Outside (o) / Both (b)
F01	Marine and freshwater aquaculture	H	i
G01.01	Nautical sports	M	i
E01	Urbanised areas, urban habitation	H	o
E02	Industrial or commercial areas	H	o
D03.02	Shipping lanes	M	i

4.2 Conservation Objectives of European Sites

Article 6.3 of the Habitats Directive and Part XAB of the Planning and Development Act 2000- 2019 require that the impact of the project (either alone or in combination with other projects or plans) on the integrity of the European site is considered with respect to the conservation objectives of the site and to its structure and function. The European Commission guidance on Natura 2000 (MN2000) states that:-

> *"The integrity of the site involves its constitutive characteristics and ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the habitats and species for which the site has been designated and the site's conservation objectives"* (MN2000, Section 4.6.4)."

The maintenance of favourable condition of qualifying interests at the site level will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. Favourable conservation status of habitats and species is described in the Guidance as follows:

- **Favourable conservation status** of a **habitat** can be described as being achieved when: "its natural range, and the area it covers within that range, is stable or increasing, and the ecological factors that 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".

- **Favourable conservation status** of a **species** can be described as being achieved when: "population data on the species concerned indicate that it is maintaining itself, and the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and there is, and will probably continue to be, sufficiently large habitat to maintain its populations on a long term basis".

Site-specific conservation objectives aim to define favourable conservation conditions for the qualifying interests, i.e. Annex I habitat and Annex II species, as applicable. The conservation objectives are presented as a list of attributes against which targets have been set. All of the attributes for each relevant feature have been considered in relation to the potential impacts associated with the permitted waste soils facility. Site specific conservation objectives (SSCOs) for the qualifying interests of Great Island Channel SAC and Cork Harbour SPA are detailed in **Table 4.6** and **Table 4.7** below.

Table 4-6: Site Specific Conservation Objectives, Attributes and Targets for Qualifying Habitats of Great Island Channel SAC[14]

Conservation Objectives of Great Island Channel SAC			
Attribute	**Measure**	**Target**	**Notes**
Mudflats and Sandflats not covered by Seawater at Low Tide (1140)			
Habitat Area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes	Habitat area was estimated using as 723ha using OSi data
Community Distribution	Hectares	Conserve the following community type in a natural condition: Mixed sediment to sandy mud with polychaetes and oligochaetes community complex.	Based on intertidal and subtidal surveys undertaken in 2006 (Aquafact, 2007) and 2011 (EcoServe, 2012; MERC, 2012).
Atlantic Salt Meadows (Glauco-Puccinellietalia Maritimae) (1330)			
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: Bawnard - 0.29ha; Carrigatohill - 1.01ha. See map 5	Based on data from Saltmarsh Monitoring Project (SMP) (McCorry and Ryle, 2009). Two sub-sites that supported Atlantic salt meadow were mapped (1.30ha) and additional areas of potential saltmarsh (17.60ha) were identified from an examination of aerial photographs, giving a total estimated area of 18.90ha. Saltmarsh habitat has also been recorded at two other sub-sites within the SAC (Curtis and Sheehy Skeffington, 1998). Further un-surveyed areas maybe present within the SAC. See coastal habitats supporting document for further details
Habitat Distribution	Occurrence	No decline or change in habitat distribution, subject to natural processes. See map 5 for known distribution	Based on data from McCorry and Ryle (2009). Within the sites surveyed by the SMP, estuary type saltmarsh over a mud substrate is most common and Atlantic Salt Meadows (ASM) is the dominant saltmarsh habitat. Further un-surveyed areas maybe present within the SAC. See coastal habitats supporting document for further details
Physical Structure: Sediment Supply	Presence / absence of physical barriers	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions	Based on data from McCorry and Ryle (2009). At Bawnard there is a seawall that was constructed in the 18th-19th centuries. At Carrigatohill the northern and eastern shorelines have been

[14] NPWS (2014b) Conservation Objectives: Great Island Channel SAC (Site Code: 001058). Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs. June 2014

Conservation Objectives of Great Island Channel SAC			
Attribute	**Measure**	**Target**	**Notes**
			significantly modified by road construction. Part of the saltmarsh has also been infilled. See coastal habitats supporting document for further details
Physical Structure: Creeks and Pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry and Ryle (2009). The ASM at Carrigatohill is poorly developed, though some of the larger sections contain salt pans. The smaller sections, however, tend to be quite uniform in topography. The saltmarsh topography at Bawnard is poorly developed with few typical saltmarsh features. See coastal habitats supporting document for further details.
Physical Structure: Flooding Regime	Hectares flooded; frequency	Maintain natural tidal regime	Based on data from McCorry and Ryle (2009). At Bawnard, the entire bay empties at low tide to expose soft intertidal mudflats. See coastal habitats supporting document for further details
Vegetation Structure: Zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry and Ryle (2009). Zonation to Salicornia flats and intertidal mudflats occurs at Carrigatohill. At Bawnard, there is succession from saltmarsh to brackish saltmarsh and wet grassland as well as zonation to intertidal mudflats at the lower saltmarsh boundary. See coastal habitats supporting document for further details
Vegetation Structure: Vegetation Height	Centimetres	Maintain structural variation within sward	Based on data from McCorry and Ryle (2009). At Carrigatohill, the sward height is quite tall due to lack of grazing. At Bawnard only part of the site is grazed. See coastal habitats supporting document for further details
Vegetation Structure: Vegetation Cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% area outside creeks vegetated	Based on data from McCorry and Ryle (2009). Some poaching was noted in places at Bawnard. See coastal habitats supporting document for further details
Vegetation Composition: Typical Species and Sub-Communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub--communities with typical species listed in SMP (McCorry and Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation Structure:	Hectares	No significant expansion of common cordgrass (Spartina	Based on data from McCorry and Ryle (2009).Spartina

Conservation Objectives of Great Island Channel SAC			
Attribute	**Measure**	**Target**	**Notes**
Negative Indicator Species – Spartina Anglica		anglica), with an annual spread of less than 1% where it is known to occur	occurs at both sub-sites in this SAC. See coastal habitats supporting document for further details

Table 4-7: Site-Specific Conservation Objectives, Attributes and Targets for Qualifying Interests of Cork Harbour SPA[15]

Over-Wintering Bird Populations for Cork Harbour SPA			
Conservation Objective: To maintain the favourable conservation condition of the following over-wintering species in Cork Harbour SPA (Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Shelduck, Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Black-headed Gull, Common Gull, Lesser Black-backed Gull) which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population Trend	Percentage Change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by these species other than that occurring from natural patterns of variation	Waterbird distribution from 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document
Conservation Objective: To maintain the favourable conservation condition of the following breeding species in Cork Harbour SPA (Common Tern), which is defined by the following list of attributes and targets:			
Breeding Population Abundance: Apparently Occupied Nests (AONs)	Number	No significant decline	Measure based on standard tern survey methods (see Walsh et al., 1995). Wilson et al. (2000) provides background summary population information for the Cork Harbour area. In 2012 the total population of common terns that nested within the wider Cork Harbour was between 85 and 95 pairs, a proportion of which now breeds outside the SPA (RPS, 2014)
Productivity Rate: Fledged Young Per Breeding Pair	Mean number	No significant decline	Measure based on standard tern survey methods (see Walsh et al., 1995). The Seabird Monitoring Programme (SMP) (JNCC, 2014) provides population data for this species
Distribution: Breeding Colonies	Number; location; area (hectares)	No significant decline	Common tern breeding colonies can be sited in both coastal and inland areas using a wide variety of habitats including sandy, rocky or well-vegetated islands in estuaries,

[15] NPWS (2014a) Conservation Objectives: Cork Harbour SPA (Site Code: 004030). Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs. December 2014

Attribute	Measure	Target	Notes
			lakes and rivers. This species can also use artificial substrates (Del Hoyo et al., 1996). First recorded nesting in saltmarsh in 1969-70 (Smiddy, 1985), the colony now largely breeds on artificial structures in at least two locations (see Wilson et al., 2000 and RPS, 2014)
Prey Biomass Available	Kilogrammes	No significant decline	Key prey items: Small fish, crustaceans, insects and occasionally squid. Key habitats: common tern forage in/over shallow coastal waters, bays, inlets, shoals, tidal-rips, drift lines, beaches, saltmarsh creeks, lakes, ponds or rivers. Foraging range: max. 37km, mean max. 33.81km, mean 8.67km (Birdlife International Seabird Database (Birdlife International, 2014))
Barriers to Connectivity	Number; location; shape; area (hectares)	No significant increase	Seabird species can make extensive use of marine waters adjacent to their breeding colonies. Foraging range: max. 37km, mean max. 33.81km, mean 8.67km (BirdLife International Seabird Database (Birdlife International, 2014))
Disturbance at the Breeding Site	Level of impact	Human activities should occur at levels that do not adversely affect the breeding common tern population	In the Cork Harbour area, this species largely breeds on artificial structures (see Wilson et al., 2000 and RPS, 2014)
Conservation Objective: To maintain the favourable conservation condition of the wetland habitat in Cork Harbour SPA as a resource for the regularly-occurring migratory waterbirds that utilise it. This is defined by the following attribute and target:			
Wetland Habitat Area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,587 hectares, other than that occurring from natural patterns of variation	The wetland habitat area was estimated as 2,587ha using OSi data and relevant orthophotographs. For further information see part three of the conservation objectives supporting document

5 EXISTING ENVIRONMENT

Ecological surveys of the site were undertaken between May 2018 and June 2019. The surveys assessed the potential for Qualifying Interests (QIs) and Species of Conservation Interest (SCIs) of European sites within the ZoI of the site and third schedule invasive species to occur within the site.

5.1 Habitats

Habitat surveys were undertaken on 23rd May 2018 by RPS Ecologist Mr Conor Ruane and on 22nd August 2018 by Ecologist Karen Banks, Greenleaf Ecology. Detailed botanical surveys were undertaken at the site on 20th June 2019.

The habitat and flora site assessment was carried out in accordance with current guidelines (Smith et al. 2010).The habitats found in the study area were classified in accordance with the guidelines set out in 'A Guide to Habitats in Ireland' (Fossitt, 2000), which classifies habitats based on the vegetation present and management history.

The site comprises Fossitt (2000) habitat Active quarries (ED4) in the actively worked area of the site (Zone B) and Exposed calcareous rock (ER2) in areas where quarrying is completed (Zone A). The margins of the quarry and Zone C comprise predominantly of Scrub (WS1) and Recolonising bare ground (ED3). The majority of the site is bound by Hedgerows (WL1), with berms positioned near to the L-3626.

No non-native plant species listed in the Third Schedule were recorded within the site during the course of the ecological surveys.

5.2 Species

Bird surveys were undertaken at the site on 23rd May 2018 and 22nd August 2018. A total of seven species of bird were recorded during the site surveys (**Table 5-1**). No species of High or Moderate Conservation Concern (Red or Amber BoCCI listed respectively) were identified during the site surveys.

Between 3 – 4 Buzzards were seen circling above the northern end of Zone C during the site survey undertaken on 23rd May 2018 and a single buzzard was observed flying over Carrigshane Hill to the west of the site on 22nd August 2018. Ravens were recorded nesting in the quarry face in Zone A and Zone B. Dunnock, blackbird, wren, wood pigeon and goldfinch were all recorded in the scrub at the quarry margins. The species recorded on site are all relatively common species and are Green listed.

The SCI species for Cork Harbour SPA are wetland and waterbirds (see **Table 4.7**). No Annex I species or SCI bird species were recorded at the site and its immediate environs during the course of the site surveys. Overall, the study area is of local value for a range of terrestrial bird species that are common in the Irish countryside.

Table 5-1: Bird Species Recorded within Midleton Quarry, 2018

Common Name	Species Name	Survey Date 23rd May 2018	22nd August 2018	Conservation BoCCI[16]
Raven	*Corvus corax*		√	Green
Buzzard	*Buteo buteo*	√	√	Green
Dunnock	*Prunella modularis*		√	Green

[16] Follows status attributed under the Birds of Conservation Concern (BoCCI) in Ireland 2014-2019 (Colhoun and Cummins, 2013).

Common Name	Species Name	Survey Date 23rd May 2018	22nd August 2018	Conservation BoCCI[16]
Blackbird	*Turdus merula*		√	Green
Wren	*Troglodytes troglodytes*		√	Green
Wood Pigeon	*Columba palumbus*		√	Green
Goldfinch	*Carduelis carduelis*		√	Green

5.3 Hydrology

The site is located in the Owennacurra River surface water catchment. A regional hydrology map is shown as **Figure 5.1** below.

The Owennacurra River flows through Midleton town, approx. 1.5km to the west of the site. Downstream of Midleton town this watercourse is referred to as the Ballynacorra River which flows into Cork Harbour further south.

The northern section of the site is located in the Dungourney River catchment which flows in a westerly direction approx. 1.9km north of the site. The Dungourney River discharges into the Owennacurra River at Midleton town. The southern section of the site drains to an unnamed stream but which is referred to on EPA mapping as the West Ballynacorra Stream. The source of the West Ballynacorra Stream is a karst spring which is located approximately 650m to the south east of the site. The West Ballynacorra Stream flows westerly and discharges into the Owenacurra/ Ballynacorra River estuary, which is part of the Great Island Channel SAC and Cork Harbour SPA.

Other than the West Ballynacorra Stream, there are no other natural surface water features within the site or in close proximity to the boundary of the site. A local hydrology map is shown as **Figure 5-2** below and **Table 5-2** provides a summary of watercourses in close proximity to the site.

Figure 5-1: Regional Hydrology Map

Figure 5-2: Local Hydrology Map

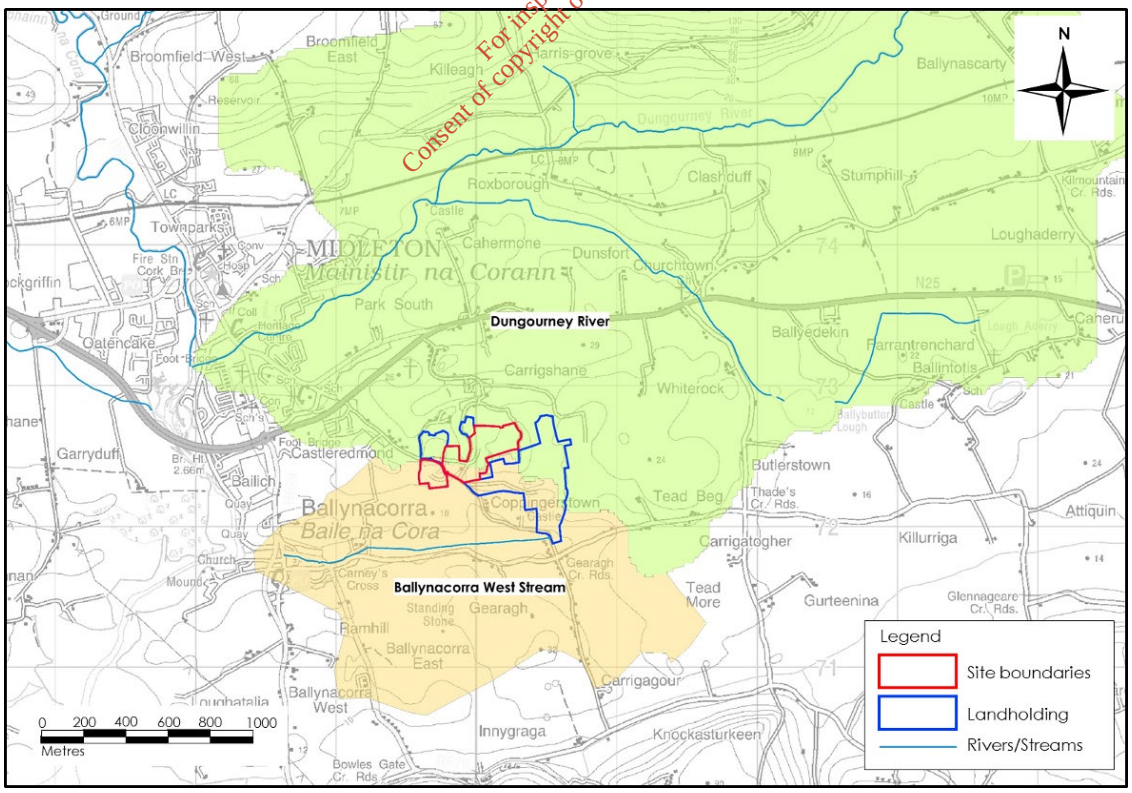


Table 5-2: Watercourses in Close Proximity to the Permitted Works

Watercourse	National Watercourse Code	Proximity to the Permitted Works	EPA Q - Value Rating 2004 -2017	WFD Status 2013 - 2018	Connectivity to Permitted Works
Ballynacorra West Stream	IE_SW_19K630910	c.0.65km	Not available	Unassigned	None
Dungourney River	IE_SW_19D070700	c1.3km	Q4 (Good Status) upstream of Midleton but reduces to Q3 (Poor Status) at Midleton Town	Poor	None

5.3.1 Flooding

The existing permitted quarrying activity allows extraction of limestone as far as 9mOD which is 1m above the water table.

No recurring flood incidents in the area of the site were identified from OPW's flood map, which is shown as on **Figure 5-3** below. CFRAM mapping has been completed for the area of the site (**Figure 5-4**). The CFRAM mapping shows that the permitted development site is not located within any fluvial or pluvial flood zone.

There is no text on local available historical 6" or 25" mapping for the site that identifies areas that are "prone to flooding" within the site boundary, or downstream of the site.

Figure 5-3: OPW Past Flood Event Map

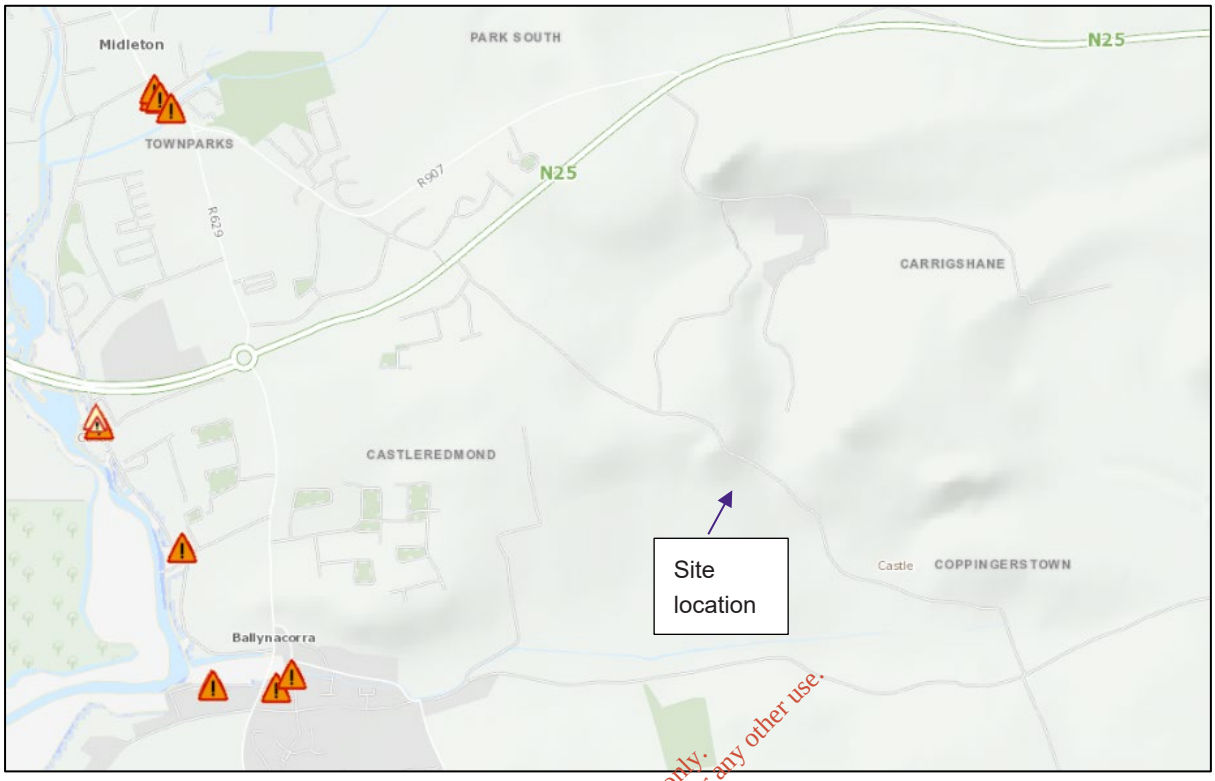
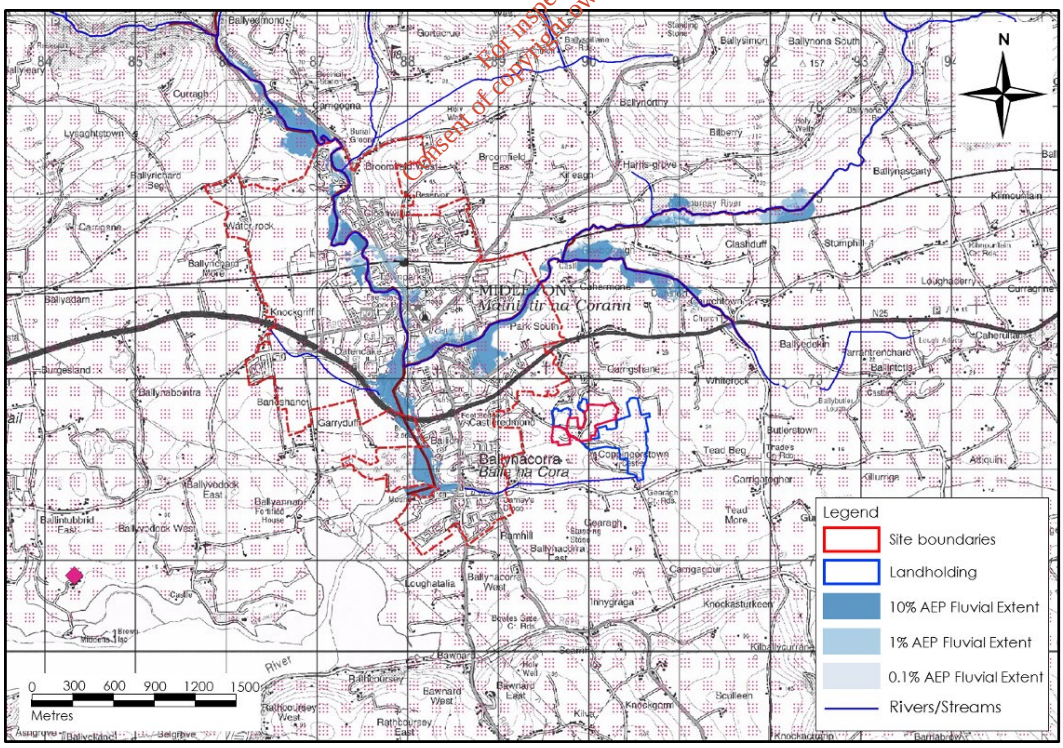


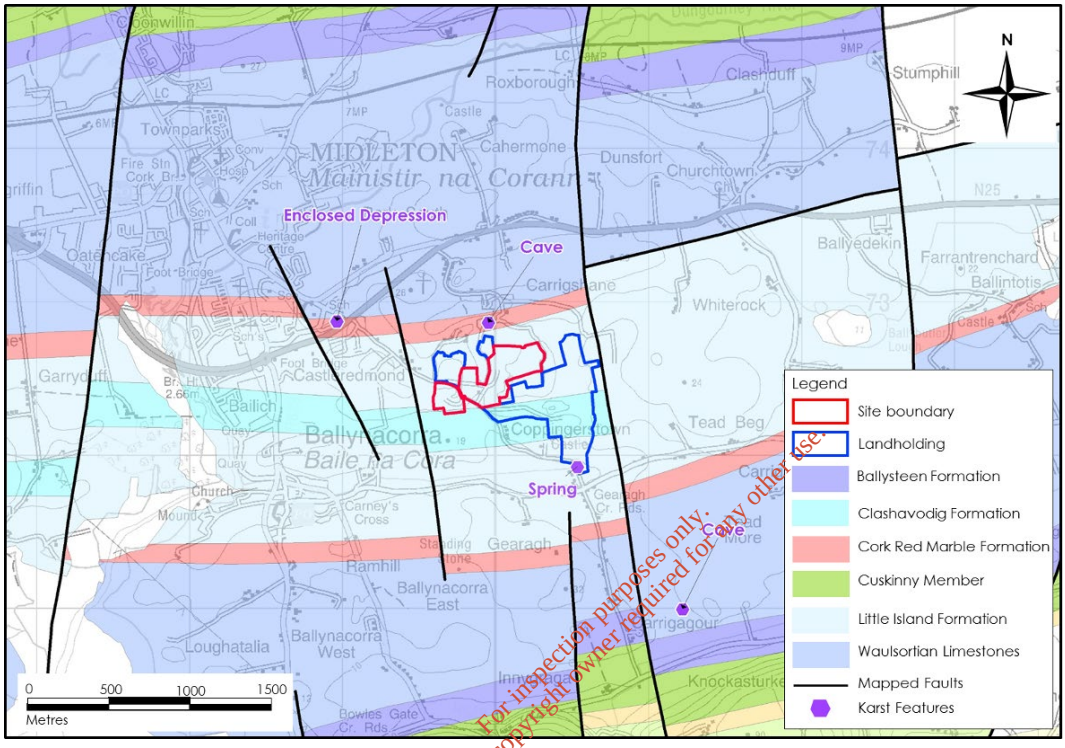
Figure 5-4: CFRAM Flood Risk Assessment Map



5.3.2 Soils, Geology and Hydrogeology

The GSI soils map (www.gsi.ie) for the site area indicates that the majority of the surrounding lands are overlain by Shallow well-drained mineral soils derived from mainly basic parent material (BminSW). In terms of bedrock geology, the Little Island formation composed of massive and crinoidal fine limestone underlies the site. This bedrock type is susceptible to karstification. A local bedrock geology map is shown as **Figure 5.5** below.

Figure 5-5: Local Bedrock Geology Map



The different bedrock units which underlie the site are mapped by the GSI as part of the same Regionally Important Karstified (diffuse) Aquifer. These rocks are devoid of intergranular permeability. Groundwater flow occurs in the many faults and joints, enlarged by karstification. There are no significant karstified rock features/weathering in the quarry walls of the site.

The groundwater flow direction in the area of the quarry is to the west/southwest. This is consistent with the local hydrology of the area which flows towards the estuary of Owenacurra Estuary located to the southwest of the site. The Owenacurra Estuary forms part of Cork Harbour SPA and Great Island Channel SAC.

The permitted site is located within the Midleton GWB (IE_SW_G_058), which is assigned Good status under the 2013-2018 WFD round (www.catchments.ie).

Based on the GSI mapping, the groundwater vulnerability rating at the site is Extreme. The groundwater level is 1 – 2m below the existing quarry floor.

6 IMPACT ASSESSMENT

6.1 Introduction

As outlined in the EU document "*Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*" and the national guidance document "*Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities*", impacts that could potentially occur through the permitted waste soils recovery works can be categorised under the following heading:

- Changes in key indicators of conservation value, such as decrease in water quality within Great Island Channel SAC and Cork Harbour SPA during the construction/ operational phase

6.2 Direct Impacts

The permitted waste soils recovery facility is not located within lands designated for nature conservation, including Great Island Channel SAC and Cork Harbour SPA. Further, there are no resource requirements (e.g. excavation or abstraction) from European sites for the permitted development. Consequently, none of the lands designated as part of European sites will be directly impacted or removed as a result of the waste soils recovery facility. Therefore, there will be no direct impacts to European sites in this regard.

6.3 Indirect Impacts

6.3.1 Construction/operational Phase

As detailed in **Section 4** and **Section 5.3.2**, there is a potential source-pathway-receptor link between the works and Great Island Channel SAC and Cork Harbour SPA. The site is connected to Great Island Channel SAC and Cork Harbour SPA via groundwater, which flows from the site to the Owenacurra Estuary, which forms part of the aforementioned European sites. The groundwater vulnerability at the site is described as 'extreme', meaning that the site and its environs are vulnerable to pollutants discharged at ground level, based on the hydrological, geological, hydrogeological and soil properties (**Section 5.3.2**). There are no surface water flowpaths from the permitted development to local streams/rivers and therefore no direct impacts on either of these surface water body types is possible from any runoff generated on-site.

The permitted development comprises backfilling an area of approximately 9ha of open pit within the subject site to an average depth of 20m above floor level, and a maximum depth of approximately 34m (eastern section of pit). Imported fill will comprise inert soil and stone (EU List of Waste Code 17 05 04). Due to the nature of the permitted development being a relatively shallow fill over a relatively small area of ground, potential impacts on groundwater will be qualitative (water quality) rather than quantitative (i.e., levels and flows).

The permitted infill material is inert soil and stone and therefore no harmful or toxic contaminates are expected to be present. Potential impacts to groundwater at this site, which are common to all construction sites, would be from potential sources such as hydrocarbon/chemical spillage during the excavation and infilling works and from areas of hard standing such as the refuelling yard and car parks .

6.3.1.1 Great Island Channel SAC

There are no direct hydrological links between the permitted site and Great Island Channel SAC, therefore there will be no direct discharges to surface water within Great Island Channel SAC from the site.

As noted above, there are no surface water flowpaths from the permitted development to local streams/rivers and therefore no direct impacts on either of these surface water body types, and in turn Great Island Channel SAC, is possible from any runoff generated on-site. The potential pathways will be via groundwater recharge and local groundwater flow.

Due to the inert nature of the permitted soil and stone fill, significant impacts on groundwater quality at the site, and in turn Great Island Channel SAC from infill activities are not anticipated. The filling of the quarry voids with inert material will improve the groundwater vulnerability at the site. There is potential for an improvement of the groundwater vulnerability at the site to, in turn, have a positive effect on groundwater receptors downstream of the site, including Great Island Channel SAC.

Accidental spillage during refuelling of construction/excavation plant with petroleum hydrocarbons is a contamination risk to soils, groundwater, and associated ecosystems, and to terrestrial and aquatic ecology. The accumulation of small spills of fuels and lubricants during routine plant use can also be a contamination risk. Hydrocarbon has a high toxicity to humans, and all flora and fauna, including fish, and is persistent in the environment. It is also a nutrient supply for adapted micro-organisms, which can rapidly deplete dissolved oxygen in waters, resulting in death of aquatic organisms. The report *Midleton Quarry, Co. Cork: Hydrogeological Assessment Report for the Proposed Discharge of Stormwater Runoff to Ground* (Hydro-Environmental Services, 2019) identified that there is potential for stormwater soakaway from the refuelling yard, car park and site access roads to contain hydrocarbon residues in the final discharge. Leaching of residue levels of hydrocarbons to the groundwater may result in a deterioration in groundwater quality. The groundwater moves laterally to the south-west, in the direction of the Owenacurra Estuary and Great Island Channel SAC. Indirect impacts to this European site as a result of deterioration in water quality to the Owenacurra Estuary and Great Island Channel SAC may impact upon the Annex I coastal habitats for which this European site is designated (see **Table 4.2**).

However, the hydrogeological assessment (Hydro-Environmental Services, 2019) found that, given the relatively small surface area of the refuelling yard (and small loading volume), the appliance of best standard practice in terms of a full retention oil interceptor, the groundwater protection afforded by the depth of unsaturation overburden (2m), the potentially large flows in the bedrock aquifer from a dilution perspective and the large downstream distance to off-site receptors (Great Island Channel is c.1.1km to the south-west), the probably risk of impact to groundwater receptors is low.

6.3.1.2 Cork Harbour SPA

There are no direct hydrological links between the site and Cork Harbour, therefore there will be no direct discharges to surface water within Cork Harbour SPA from the site.

The potential impacts on Cork Harbour SPA as a result of the permitted works are limited to impacts primarily related to changes in water quality in the groundwater at the site, which flows in a south-westerly direction towards Owenacurra Estuary and Cork Harbour SPA. As discussed in **Section 6.3.1.1**, potential risks from the permitted works are primarily related to the leaching of residue levels of hydrocarbons to the groundwater at the permitted site and, potentially, the Owenacurra Estuary and Cork Harbour SPA c.1.1km downstream. A reduction in water quality within Cork Harbour SPA may impact upon wetland habitats, which are utilised as a resource by SCI for this SPA.

6.3.2 Operational Phase

6.3.2.1 Great Island Channel SAC

The site will be used for mainly agricultural purposes after the restoration is complete. No impacts on groundwater quality or quantity (flows or levels) at the permitted site and, in turn, Great Island Channel are anticipated post restoration phase.

6.3.2.2 Cork Harbour SPA

The site will be used for mainly agricultural purposes after the restoration is complete. No impacts on groundwater quality or quantity (flows or levels) at the permitted site and, in turn, Cork Harbour SPA are anticipated post restoration phase.

6.4 Assessment of Habitats and Species of Conservation Interest

The site-specific Conservation Objectives for Great Island Channel SAC and Cork Harbour SPA are presented in **Section 4.2**. This section assesses the likelihood of the permitted waste soils recovery works impacting the site-specific conservation objectives assigned for Great Island Channel SAC and Cork Harbour SPA.

6.4.1 Attributes for Great Island Channel SAC

Great Island Channel SAC is designated for 2 no. Annex I habitats. Attributes and proposed targets to maintain favourable conservation condition for both of these habitats, in addition to potential impacts are described in **Table 6.1** below.

Table 6-1: Site-specific Conservation Objectives, Attributes, Targets and Potential Impacts for Great Island Channel SAC

Conservation Objectives of Great Island Channel SAC (NPWS, 2014b)			
Attribute	**Measure**	**Target**	**Potential Impacts**
Mudflats and Sandflats Not Covered by Seawater at Low Tide (1140)			
Habitat Area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes	Connectivity between the site and this SAC is limited to remote hydrogeological connectivity (this SAC is c.1.1km from the site). The permitted works will not affect the area of mudflat and sandflat habitat. There will be no loss or deterioration in area for this Annex I habitat.
Community Distribution	Hectares	Conserve the following community type in a natural condition: Mixed sediment to sandy mud with polychaetes and oligochaetes community complex.	Connectivity between the site and this SAC is limited to remote hydrogeological connectivity (this SAC is c.1.1km from the site). The community distribution and condition of this Annex I habitat will not be impacted by the permitted development.
Atlantic Meadows (Glauco-Puccinellietalia Maritimae) (1330)			
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: Bawnard - 0.29ha; Carrigtohill - 1.01ha.	Connectivity between the site and this SAC is limited to remote hydrogeological connectivity (this SAC is c.1.1km from the site). Atlantic Salt Meadows (1330) associated with Great Island Channel SAC will not be impacted by the permitted development. There will be no loss or deterioration in area for this Annex I habitat.
Habitat Distribution	Occurrence	No decline or change in habitat distribution, subject to natural processes.	Connectivity between the site and this SAC is limited to remote hydrogeological connectivity (this SAC is c.1.1km from the site). There will be no decline or change in habitat distribution of this Annex I habitat.
Physical Structure: Sediment Supply	Presence / absence of physical barriers	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions	The physical structure of this Annex I habitat will not be impacted by the permitted development due to the remote connectivity between the site and the Great Island Channel SAC.

Conservation Objectives of Great Island Channel SAC (NPWS, 2014b)			
Attribute	**Measure**	**Target**	**Potential Impacts**
Physical Structure: Creeks and Pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	
Physical Structure: Flooding Regime	Hectares flooded; frequency	Maintain natural tidal regime	
Vegetation Structure: Zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	The vegetation zonation and range of this Annex I habitat will not be impacted by the permitted development due to the remote connectivity between the site and the Great Island Channel SAC.
Vegetation Structure: Vegetation Height	Centimetres	Maintain structural variation within sward	The vegetation structure and sward variation of this Annex I habitat will not be impacted by the permitted development due to the remote connectivity between the site and the Great Island Channel SAC.
Vegetation Structure: Vegetation Cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% area outside creeks vegetated	
Vegetation Composition: Typical Species and Sub--Communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub--communities with typical species listed in SMP (McCorry and Ryle, 2009)	The vegetation composition of this Annex I habitat will not be impacted by the permitted development due to the remote connectivity between the site and the Great Island Channel SAC.
Vegetation Structure: Negative Indicator Species – *Spartina Anglica*	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: Bawnard - 0.29ha; Carrigtohill - 1.01ha. See map 5	The vegetation structure of this Annex I habitat will not be impacted by the permitted development due to the remote connectivity between the site and the Great Island Channel SAC.

6.4.2 Attributes for Over-wintering Populations of Cork Harbour SPA

Potential impacts to the attributes and associated targets for all over-wintering SCI species of Cork Harbour SPA are described in **Table 6.2** below.

Table 6-2: Site-specific Conservation Objectives, Attributes, Targets and Potential Impacts for Over-Wintering Bird Populations of Cork Harbour SPA

Over-Wintering Bird Populations for Cork Harbour SPA (NPWS, 2014a)
Conservation Objective: To maintain the favourable conservation condition of the following over-wintering species in Cork Harbour SPA (Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Shelduck, Wigeon,

Teal, Pintail, Shoveler, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Black-headed Gull, Common Gull, Lesser Black-backed Gull) which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Potential Impacts
Population Trend	Percentage Change	Long term population trend stable or increasing	The findings of the desk and field based surveys completed to inform this NIS confirm that the footprint of the site and its immediate environs are not located within integral or routinely utilised over-wintering, roosting or feeding habitats critical for over-wintering populations of SCI species. The permitted works will not result in direct or indirect impacts to the SCI species for which this SPA is designated, therefore there will be no impacts or changes in population trend to Cork Harbour SPA.
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by these species other than that occurring from natural patterns of variation	Site surveys undertaken in 2018 confirmed that the footprint and the immediate environs of the site do not support or provide suitable habitat to support the distribution of SCI species for which this European site has been designated. Therefore, there will be no impacts or changes in distribution of over-wintering populations of SCI species.
Conservation Objective: To maintain the favourable conservation condition of the wetland habitat in Cork Harbour SPA as a resource for the regularly-occurring migratory waterbirds that utilise it. This is defined by the following attribute and target:			
Wetland Habitat Area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,587 hectares, other than that occurring from natural patterns of variation	The permitted works will not result in the direct land-take of the wetland habitats comprising Cork Harbour SPA. Therefore, the permitted development will not impact this attribute for Cork Harbour SPA in this regard. Indirect impacts to wetland habitats associated with Cork Harbour SPA will be avoided through the use of inert fill materials and the implementation of pollution prevention measures at the site.

6.4.3 Attributes for Breeding Populations of Cork Harbour SPA

Cork Harbour SPA supports one SCI breeding species; i.e. Common Tern (*Sterna hirundo*). Attributes and proposed targets to maintain favourable conservation condition for this species in addition to potential impacts are described in **Table 6.3** below.

Table 6-3: Conservation Objectives, Attributes, Targets and Potential Impacts for Common Tern Population within Cork Harbour SPA[17]

A193 Common Tern (*Sterna hirundo*)			
To maintain the favourable **conservation condition of Common Tern in Cork Harbour SPA, which is defined by the following list of attributes and targets:**			
Attribute	**Measure**	**Target**	**Potential Impacts**
Breeding population abundance: apparently occupied nests (AONs)	Number	No significant decline	The permitted waste soils recovery facility is not located within or in proximity to breeding sites for Common Tern within Cork Harbour SPA. The mooring dolphins at Ringaskiddy deep water port support breeding populations of Common Tern. The permitted facility will not directly impact upon key feeding or breeding habitats which sustain Common Tern in Cork Harbour SPA. Indirect impacts to this species through the deterioration of water quality in Cork Harbour will be mitigated through the use of inert fill materials and pollution prevention measures. The permitted facility will not result in indirect disturbance effects through construction/ operational and post-restoration phase activities to the Common Tern populations associated with Cork Harbour SPA.
Productivity rate: fledged young per Breeding pair	Mean number	No significant decline	
Distribution: breeding colonies	Number; location; area (hectares)	No significant Decline	
Prey biomass available	Kilogrammes	No significant decline	
Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase	
Disturbance at the breeding site	Level of impact	Human activities should occur at levels that do not adversely affect the breeding common tern population	

6.5 Cumulative/ In-Combination Effects

It is a requirement of Appropriate Assessment that the cumulative or in-combination effects of the permitted development together with other Plans or projects are assessed. Cumulative impacts can result from the successive, incremental, and/or combined effects of a development (plan, project or activity) when added to other existing, planned, and/or reasonably anticipated developments.

A search of the Cork County planning enquiry system[18], My Plan[19] and the EIA Portal[20] was conducted for developments that may have in-combination effects on European sites with the permitted waste soils recovery facility. The search included developments that are proximal to the site and those that may have an adverse cumulative or in-combination impact with the proposals on the water quality of Cork Harbour.

Plans relevant to the area were searched in order to identify any elements of the plans that may act cumulatively or in-combination with the works.

[17] NPWS (2014) Conservation Objectives: Cork Harbour SPA 004030. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
[18] https://www.corkcoco.ie/en/planning/planning-enquiry-online-submissions
[19] https://myplan.ie/
[20] https://www.housing.gov.ie/planning/environmental-assessment/environmental-impact-assessment-eia/eia-portal

A list of those projects and Plans which may potentially contribute to cumulative or in-combination impacts with the permitted waste soils facility was generated for as listed in **Table 6.4** below.

Table 6-4: Cumulative and In-combination Effects of Other Plans and Projects

Plan / Programme / Project	Key Objectives / Policies / Proposals	Potential Impact
Cork County Development Plan 2014-2020	The policies and objectives of this plan are intended to contribute to the delivery of a number of key aims for the county as a whole. They are as follows: • Enhanced quality of life for all • Sustainable patterns of growth in urban and rural areas • Sustainable and balanced economic investment • An effective physical and community • Infrastructure • A quality-built environment • A network of enhanced natural resources • Responsible guardianship of the County	Policies and objectives of the Cork County Development Plan 2014 – 2020 ensure that local planning applications comply with proper planning and sustainability and with the requirements of relevant EU Directives and environmental considerations, there is no potential for adverse in-combination effects on European Sites.
River Basin District Management Plan 2018- 2021	The plan establishes the following priorities: • Ensure full compliance with relevant EU legislation; • Prevent deterioration; • Meet the objectives for designated protected areas; • Protect high-status waters; and • Implement targeted actions and pilot schemes in focused sub-catchments aimed at (1) targeting water bodies close to meeting their objective and (2) addressing more complex issues that will build knowledge for the third cycle.	Implementation of the environmental objectives of the RBDMP and compliance with the EU Water Framework Directive 2000 (2000/60/EC) and any associated Programmes of Measures, ensure that projects shall only be permitted where it can be clearly demonstrated that the proposal would not have an unacceptable impact on the water environment, including surface waters, groundwater quality and quantity, river corridors and associated wetlands, estuarine waters and coastal waters. Compliance with this Plan will result in net positive in-combination effects to European sites.
Inland Fisheries Ireland Corporate Plan 2016 - 2020 The Inland Fisheries Act 2010	• Vision: To provide an accessible and sustainable, world class, inland fisheries resource for all. • Mission: To ensure the valuable natural resources of Inland Fisheries and Sea Angling are protected, conserved, managed, developed and promoted to enable them to achieve their full potential. High Level Objective 1 – Fish: To ensure that Ireland's fish populations are managed and protected to ensure their conservation status remains favourable. That they provide a basis for a sustainable world class recreational angling	Implementation and compliance with the goals of the IFI corporate plan and legislation will result in net positive in-combination effects to European sites

Plan / Programme / Project	Key Objectives / Policies / Proposals	Potential Impact
	product, and that pristine aquatic habitats are also enjoyed for other recreational uses. High Level Objective 2 – Habitats: To develop and improve fish habitats and ensure that the conditions required for fish populations to thrive are sustained and protected. EU (Quality of Salmonid Waters) Regulations 1988. All works during development and operation of the project must aim to conserve fish and other species of fauna and flora habitat; biodiversity of inland fisheries and ecosystems and protect spawning salmon and trout.	
IPPC Programme **Local Authority Discharge**	There are no IPPC Licence holders discharging to proximal or downstream European Sites. The nearest IPCC facility is Mr Mark O'Connor (Ref. No. P0895) which is located 2.5km to the south west of the site. .	No impacts
WwTP discharges	Midleton	Discharges from municipal WwTPs are required to meet water quality standards. Irish Water Capital Investment Plan 2014-2016 and 2017 – 2021 proposes to upgrade water treatment services countrywide. The long-term cumulative impact is predicted to be negligible.
Local Planning Applications[21]	Local planning applications in proximity and within the zone of influence of the permitted facility mainly relate to residential dwellings, many with site soil effluent treatment systems associated with them and some agricultural related applications.	Adherence to the overarching policies and objectives of the Cork County Development Plan 2014 - 2020 ensure that local planning applications and subsequent grant of planning comply with the core strategy of proper planning and sustainability and with the requirements of relevant EU Directives and environmental considerations, there is no potential for adverse in combination effects on European Sites.
Midleton GAA	Club house, pitches and associated facilities at Youghal Road, Midleton.	A screening for AA has been undertaken for the proposals which ruled out any significant effects on European Sites.

[21] The Local Planning Applications included in this potential in-combination impacts assessment support the following criteria; planning applications granted within the past five years that may contribute to potential cumulative impacts on European sites of concern. Search conducted on 22/07/2020

Plan / Programme / Project	Key Objectives / Policies / Proposals	Potential Impact
Irish Distillers	Change of use from warehouse to workshop with ancillary storage, training area and office, modifications to the façade, 2 no. attached exterior store areas and all ancillary site development works	A screening for AA has been undertaken for the proposals which ruled out any significant effects on European Sites.
Dunkettle Interchange	The proposed provision of an improved interchange at the location of the existing Dunkettle Interchange at the intersection of the N8, the N25 and the N40 in the townland of Dunkettle, Co. Cork.	A Natura Impact Statement (NIS) was prepared for the proposed development as part of the planning application. As a result of the appropriate design of the proposed development and proposed mitigation measures, the NIS concluded that the proposed development will have not result in impacts on the integrity of any European Site.
Water Rock Urban Expansion Area (UEA) Infrastructure Works	New services corridor link road, surface water drainage for new infrastructure and for UEA, upgrade of Cork/ Midleton Road and Northern Relief Road Junction, traffic management measures, road to access railway station and bridge to cross over existing railway line, new railway stop, upgrade/ realignment of existing Water Rock road, wastewater pumping station for future UEA development.	A screening for AA has been undertaken for the proposals which ruled out any significant effects on European Sites.

6.6 Conclusion of Impact Assessment

The main potential conduit of pollutants from the permitted facility to groundwater at the site and in turn Cork Harbour SPA during the construction/operation of the facility is the leaching of residue levels of hydrocarbons to the groundwater during excavation and infilling works and from areas of hard standing such as the refuelling yard, car parks and access roads. The groundwater at the permitted site flows in a south-westerly direction towards the Owenacurra Estuary and Cork Harbour SPA. Leaching of hydrocarbons to groundwater, and control of same, is considered the main issue in relation to the avoidance of potential impacts on water quality within wetland habitats at Cork Harbour SPA, which are utilised as a resource by SCI.

There is also connectivity via groundwater between the waste soils facility and Great Island Channel SAC. The implementation of best practice design, construction and operational measures will negate potential impacts to this European site.

Robust and effective mitigation measures to avoid and or ameliorate these impacts are provided in **Section 7**. All possible sources of effects from the permitted waste soils recovery works, in combination with all other sources in the existing environment and any other effects likely to arise from other proposed plans or projects have been identified.

No other pathways have been identified by which any plan or project could have a likely significant in-combination effect on any of the European sites.

7 MITIGATION

Mitigation is defined by MN2000 as '*measures aimed at minimising or even cancelling the negative impact of a plan or project, during or after its completion*' (paragraph 4.5.2). Potential impacts identified in the above chapters include deterioration of the water quality within the Midleton groundwater body underlying the site and potential downstream impacts on water quality within Great Island Channel SAC and wetland habitats utilised by SCI of Cork Harbour SPA. Pollution prevention measures are provided below to avoid potentially deleterious substances entering the groundwater and to avoid the potential for any indirect impacts to habitats designated as part of Great Island Channel SAC and species designated as SCI for Cork Harbour SPA.

Roadstone shall comply with and implement the requirements and mitigation measures as set out below.

7.1 Mitigation Measures: Construction/ Operational Phase

The following table details the mitigation measures that shall be implemented to prevent adverse impacts upon the SCI for Cork Harbour SPA (as listed in **Table 4.4**) and the wetland habitats upon which they depend.

Table 7-1: Table of Construction Phase Mitigation Measures

Objective(s)	Measure	Details of Mitigation
Protection of groundwater quality	Control of infill materials	Only material that is proven to be suitable prior to delivery to the site shall be accepted. • Pre-agreed source sites for inert material ensuring no pollutants, unauthorised material, invasive species as per the waste acceptance procedures. • The site will operate under an Environmental Management System. • All required pollution prevention measures will be implemented at the site. • The operator will prepare and implement an Emergency Response Procedure. • The operator will complete environmental monitoring, including local groundwater water monitoring. • A phased restoration of the site will be implemented, with an agricultural use implemented following restoration for the majority of the site. • The operator will have a documented waste recording procedure for all material entering the site. • No unauthorised dumping of waste will be allowed at the site.
Avoid hydrocarbon loss to groundwater	Best practice pollution prevention measures (**Hydrocarbons**)	• There will be no on-site storage of fuels permitted at the site. • All on-site refuelling will be completed in a designated area and from a mobile double skinned fuel bowser. • The designated refuelling area will be located in a hardstanding area with surface water drainage collected and passed through a class 1 full retention oil interceptor (with silt trap) and constructed wetlands. • All plant and machinery will be serviced before being mobilised to site, and regular leak inspections will be completed during the backfilling works. • No substantial plant maintenance will be completed on site, any broken-down plant will be removed from site to be fixed. • An emergency spill kit with oil boom, absorbers etc. will be kept on site for use in the event of an accidental spill.

7.2 Mitigation Measures: Operational Phase

No significant adverse impacts were identified during the post restoration phase; therefore, no specific mitigation measures are required. Groundwater levels and groundwater quality will be monitored post restoration at 7 no. wells. In addition, the discharge from the oil interceptor and surface water drainage network will be monitored.

8 ANALYSIS AND CONCLUSIONS

8.1 Integrity of the European Sites

From the *Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (EC, 2002), the meaning of integrity and how potential adverse effects on it may be assessed is described as follows;

'*The integrity of a site involves its constitutive characteristics and ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the habitats and species for which the site has been designated and the site's conservation objectives*' (MN2000, Section 4.6.4)'.

8.2 Integrity of Great Island Channel SAC

Site specific conservation objectives were published in June 2014 for Great Island Channel SAC (NPWS, 2014b). This document provides specific attributes and targets by which the maintenance of favourable conservation condition of qualifying interests within Great Island Channel SAC is measured. The overarching conservation objective for the European site is as follows:

Objective: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected (see **Section 3**).

Potential exists for impacts to the QIs of Great Island SAC during the construction/ operational phase of the permitted waste soils recovery facility; however, these can be readily mitigated through the implementation of mitigation as outlined in **Section 7**.

From the information gathered and the predictions made about the changes that are likely to result from the construction/ operational stage of the project and the mitigation measures proposed to avoid impacts to the SAC, the integrity of site checklist is completed for Great Island SAC in **Table 8.1** below.

Table 8-1: Integrity of Site Checklist for Great Island SAC

Conservation Objectives Does the project have the potential to:	Yes or No	Comment
Cause delays in progress towards achieving the conservation objectives of the site?	No	The permitted works will not cause delays in achieving the conservation objectives of the site. Potential impacts in the form of water quality deterioration to Great Island Channel SAC can be readily mitigated. Required mitigation measures are outlined in Section 7.
Interrupt progress towards achieving the conservation objectives of the site?	No	The permitted works will not interrupt progress towards achieving the conservation objectives of the site. Potential impacts in the form of water quality deterioration to Great Island Channel SAC can be readily mitigated. Required mitigation measures are outlined in Section 7.
Disrupt those factors that help to maintain the favourable conditions of the site?	No	The permitted works will not disrupt those factors that help to maintain the favourable conditions of the site. Potential impacts in the form of water quality deterioration to Great Island Channel SAC can be readily mitigated. Required mitigation measures are outlined in Section 7.
Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?	No	The permitted works will not interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site. Potential impacts in the form of water quality deterioration to Great Island Channel SAC can be readily mitigated. Required mitigation measures are outlined in Section 7.

Conservation Objectives Does the project have the potential to:	Yes or No	Comment
Other Indicators		
Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?	No	Potential impacts in the form of water quality deterioration to Great Island Channel SAC can be readily mitigated. Required mitigation measures are outlined in Section 7.
Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?	No	Potential impacts in the form of water quality deterioration to Great Island Channel SAC can be readily mitigated. Required mitigation measures are outlined in Section 7.
Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?	No	Potential impacts in the form of water quality deterioration to Great Island Channel SAC can be readily mitigated. Required mitigation measures are outlined in Section 7.
Reduce the area of key habitats?	No	There will be no direct loss of key habitats within the Great Island Channel SAC. Potential impacts in the form of water quality deterioration to Great Island Channel SAC can be readily mitigated. Required mitigation measures are outlined in Section 7.
Reduce the population of key species?	No	There will be no reduction of key species within Great Island Channel SAC.
Change the balance between key species?	No	The permitted works will not change the balance between key species associated with Great Island Channel SAC.
Reduce diversity of the site?	No	The permitted works will not reduce the diversity of the Great Island Channel. Potential impacts in the form of water quality deterioration to Great Island Channel SAC can be readily mitigated. Required mitigation measures are outlined in Section 7.
Result in disturbance that could affect population size or density or the balance between key species?	No	No impacts have been identified that would result in disturbance that could affect population size or density or balance between key species associated with Great Island Channel SAC.
Result in fragmentation?	No	No impacts have been identified that would result in fragmentation of habitats for which the Great Island Channel SAC has been designated.
Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?	No	No key features associated with the Great Island Channel SAC will be lost as a result of the construction or operation of the permitted works.

8.3 Integrity of Cork Harbour SPA

Site specific Conservation Objectives were published for Cork Harbour SPA in December 2014. This document provides specific attributes and targets by which the maintenance of favourable conservation condition of qualifying interests within Cork Harbour SPA are measured. The overarching conservation objective for the European sites is as follows:

Objective: To maintain or restore the favourable conservation condition of the Special Conservation Interests for which the SPA has been selected (see **Section 3**).

Potential exists for impacts to the SCIs of Cork Harbour SPA during the construction and operation phase of the permitted waste soils facility; however, these can be readily mitigated through the implementation of mitigation as outlined in **Section 7**.

From the information gathered and the predictions made about the changes that are likely to result from the construction and operation stages of the project and the mitigation measures proposed to avoid impacts to the SPA, the integrity of site checklist is completed for Cork Harbour SPA in **Table 8.2** below.

Table 8-2: Integrity of Site Checklist for Cork Harbour SPA

Conservation Objectives Does the project have the potential to:	Yes or No	Comment
Cause delays in progress towards achieving the conservation objectives of the site?	No	Potential impacts affecting Cork Harbour SPA will be avoided and will not cause delays in achieving the conservation objectives of the site. Required mitigation measures are outlined in Section 7.
Interrupt progress towards achieving the conservation objectives of the site?	No	Potential impacts affecting Cork Harbour SPA will be avoided and will not interrupt progress in achieving the conservation objectives of the site. Required mitigation measures are outlined in Section 7.
Disrupt those factors that help to maintain the favourable conditions of the site?	No	Factors potentially disrupting the favourable conservation conditions of the site will be restricted through the implementation of mitigation measures. Required mitigation measures are outlined in Section 7.
Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?	No	Potential impacts affecting Cork Harbour SPA such as the deterioration of groundwater quality will be minimised through the application of mitigation. Required mitigation measures are outlined in Section 7.
Other Indicators		
Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?	No	Potential impacts may occur through pollution of groundwater during the construction/ operational phase. However these impacts can be effectively mitigated. Required mitigation measures are outlined in Section 7.
Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?	No	Potential impacts may occur through pollution of groundwater during the construction/ operational phase. However these impacts can be effectively mitigated. Required mitigation measures are outlined in Section 7.
Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?	No	Potential impacts may occur through pollution of groundwater during the construction/ operational phase. However these impacts can be effectively mitigated. Required mitigation measures are outlined in Section 7.
Reduce the area of key habitats?	No	There will be no direct loss of key habitats associated with Cork Harbour SPA. However, potential indirect impacts may occur through pollution of groundwater during the construction/ operational phase. However these impacts can be effectively mitigated. Required mitigation measures are outlined in Section 7.
Reduce the population of key species?	No	There will be no direct impacts to the SCI species for Cork Harbour SPA during the project's construction or operational phase. Indirect impacts may occur due to the deterioration of groundwater quality during the project's construction/ operational phase. However these impacts can be effectively mitigated. Required mitigation measures are outlined in Section 7.
Change the balance between key species?	No	There will be no direct impacts to the SCI species for Cork Harbour SPA during the construction/ operational or post restoration phase of the project. Indirect impacts may occur due to the deterioration of groundwater quality during the project's construction/ operational phase. However these impacts can be effectively mitigated. Required mitigation measures are outlined in Section 7.
Reduce diversity of the site?	No	Indirect impacts may occur due to the deterioration of groundwater quality during the project's construction/ operational phase. However these impacts can be effectively mitigated. Required mitigation measures are outlined in Section 7.

Conservation Objectives Does the project have the potential to:	Yes or No	Comment
Result in disturbance that could affect population size or density or the balance between key species?	No	There will be no disturbance impacts on SCI species for Cork Harbour SPA as a result of the permitted works.
Result in fragmentation?	No	The permitted works will not result in the fragmentation of areas designated as part of Cork Harbour SPA.
Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?	No	No key features of Cork Harbour SPA, such as intertidal habitats, key feeding or roosting sites will be lost or reduced as a result of construction or operation of the permitted works.

8.4 Conclusion

This NIS has been prepared following the Department of the Environment, Heritage and Local Government guidance *'Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities*' (DoEHLG, 2010a). The assessment for the permitted Waste Soils Facility, Midleton, Co. Cork investigates the potential adverse effects on the qualifying interests of European sites arising from the proposals. The assessment considers whether the waste soils facility construction/ operation and use post-restoration, alone or in combination with other projects or plans, will have adverse effects on the integrity of a European Site, and includes any mitigation measures necessary to avoid, reduce or offset negative effects.

Provided that the mitigation measures recommended in **Section 7** are implemented in full, it can be objectively concluded that the permitted waste soils facility will not adversely affect the integrity of Great Island Channel SAC or Cork Harbour SPA in view of the sites conservation objectives and that the conservation status of the special conservation interests and qualifying Annex I habitats will not be compromised by the waste soils facility directly, indirectly or cumulatively.

The key considerations that have contributed towards this conclusion are summarised as follows:

- The permitted waste soils facility is not located within lands designated for nature conservation, including Cork Harbour SPA and Great Island Channel SAC. Further, there are no resource requirements (e.g. excavation or abstraction) from European sites for the permitted development. Consequently, none of the lands designated as part of European sites will be directly impacted or removed as a result of the permitted waste soils facility.

- No indirect impacts on the water quality of Cork Harbour SPA or Great Island Channel SAC are expected in relation to a reduction in groundwater quality during the construction/ operational phase due to the use of suitable fill material and the requirement for the permitted works to adhere to best practice pollution control measures (see **Section 7**).

- No disturbance or displacement impacts on the SCI of Cork Harbour are expected to occur during the construction/ operational phase or post restoration phase of the facility as the site does not support habitats of ecological significance for SCI of this SPA, further, the permitted site does not overlook this SPA.

The conclusion of this NIS is that with the implementation of best practice and the recommended mitigation measures there will be no potential for direct, indirect or cumulative impacts arising from the permitted Waste Soils Facility, Midleton, Co. Cork either alone or in combination with any other plans or projects. The integrity of Great Island Channel SAC or Cork Harbour SPA will not be adversely affected. No reasonable scientific doubt remains as to the absence of such adverse effects.

9 REFERENCES

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Appendix A

AA Screening Determination

Appropriate Assessment Screening Determination

In accordance with Regulation 42(1) of the European Communities (Birds and Natural Habitats) Regulations 2011 as amended, the Agency has undertaken Appropriate Assessment screening to assess, in view of best scientific knowledge and the conservation objectives of the site, if the proposed activity, individually or in combination with other plans or projects is likely to have a significant effect on European Site. In this context, particular attention was paid to the European Sites listed below.

Consent Details:

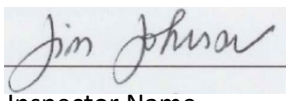
Reg. No.	W0307-01
Applicant Name:	Roadstone Limited
Type of Consent Sought:	Waste
Location of facility:	Castleredmond, Midleton, Cork, D24PKK2
Licence Application Date:	18th December 2019
European Site(s) assessed:	Cork Harbour SPA (Site Code: 004030)
	Great Island Channel SAC (Site Code: 001058)
Date of AA Screening Determination:	11th June 2020

AA Screening Determination:

That the proposed activity is not directly connected with or necessary to the management of any European site and that it cannot be excluded, on the basis of objective information, that the proposed activity, individually or in combination with other plans or projects, will have a significant effect on any European site and accordingly determined that an Appropriate Assessment of the proposed activity is required, and for this reason determined to require the applicant to submit a Natura Impact Statement.

This determination has been made based on the following:

- There is potential hydrological connectivity via groundwater to Cork Harbour SPA (Site Code: 004030) and Great Island Channel SAC (Site Code: 001058).



Date: 11th June 2020

Inspector Name
Office of Environmental Sustainability

Appendix B

Screening for Appropriate Assessment Report

RPS

Waste Soils Recovery Facility, Midleton, Co. Cork

Screening for Appropriate Assessment

rpsgroup.com/ireland

January, 2019

Waste Soils Recovery Facility, Midleton, Co. Cork

Screening for Appropriate Assessment

Document Control Sheet

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Project Title:	Waste Soils Recovery Facility, Midleton, Co. Cork
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1 INTRODUCTION

RPS has been commissioned by Roadstone Limited to conduct a screening for Appropriate Assessment (AA) for a proposed waste soils recovery facility at a site referred to as Midleton Quarry, located south east of Midleton, Co. Cork as can be seen in **Figure 1.1** below

This report comprises information in support of screening for AA in line with the requirements of Article 6(3) of the EU Habitats Directive (Directive 92/43/EEC) on the Conservation of Natural Habitats and of Wild Fauna and Flora; the Planning and Development Acts 2000-2018; and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011).

1.1 LEGISLATIVE CONTEXT FOR APPROPRIATE ASSESSMENT

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, better known as "The Habitats Directive", provides legal protection for habitats and species of European importance. Articles 3 to 9 of the Directive provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000.

The Habitats Directive has been transposed into Irish law by Part XAB of the Planning and Development Acts 2000 - 2018 and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/2011) as amended.

Articles 6(3) and 6(4) of the Habitats Directive establish the requirement for AA and set out the decision-making principles for the need for AA for plans and projects likely to impact on or to adversely affect the integrity of European sites.

Article 6(3) states:

> *Any plan or project not directly connected with or necessary to the management of the* [Natura 2000] *site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.*

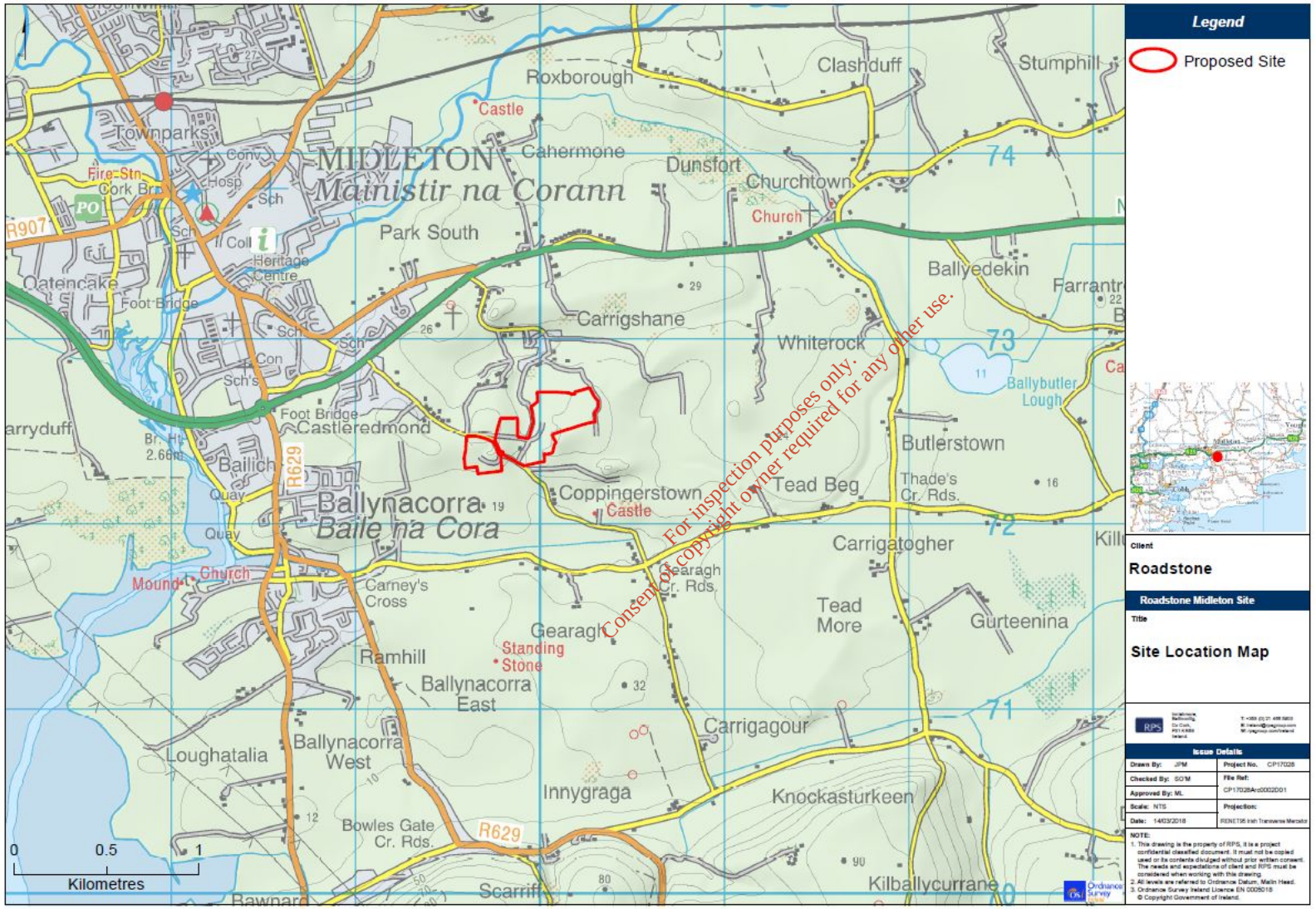
Article 6(4) states:-

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

Natura 2000 sites are defined under the Habitats Directive (Article 3) as a coherent European ecological network of special areas of conservation, composed of sites hosting the natural habitat types listed in Annex I or habitats of the species listed in Annex II. This network shall enable the natural habitat types and the species habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range. In Ireland, these sites are designated as European sites and include Special Protection Areas (SPAs), established under the EU Birds Directive (79/409/EEC, as codified by 2009/147/EC) for birds and Special Areas of Conservation (SACs), established under the Habitats Directive 92/43/EEC for habitats and species.

Roadstone Limited and Cork County Council are obliged to examine the likely significant effects, individually or in combination with other Plans and projects, of the proposal on European sites in light of their specific qualifying interests and conservation objectives. If screening determines that there is likely to be significant effects on a European Site, then a Stage 2 AA must be carried out for this proposal, including the compilation of a Natura Impact Statement (NIS) to inform the decision making.

Figure 1.1: Site Location



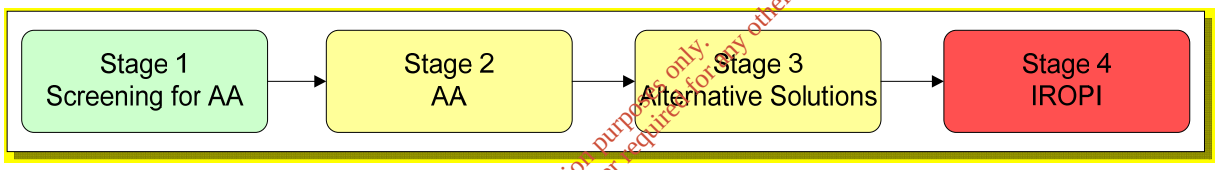
2 METHODOLOGY

2.1 STAGES OF APPROPRIATE ASSESSMENT

The Department of the Environment, Heritage and Local Government guidelines '*Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities'* (DEHLG, 2009, rev. 2010) outline the European Commission's methodological guidance (EC, 2002) for AA. They promote a four-stage process to complete the AA and outline the 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 four stages are summarised diagrammatically in **Figure 2.1**. Stages 1-2 deal with the main requirements for assessment under Article 6(3) and Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations 2011 as amended. Stage 3 may be part of the Article 6(3) Assessment or may be a necessary precursor to Stage 4. Stage 4 is the main derogation step of Article 6(4).

Figure 2.1: Stages of Appropriate Assessment - Taken from Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (2010)



The methodology followed in relation to this assessment has had regard to the following guidance and legislation:-

- *'Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities'* (DOEHLG 2009, rev 2010);
- *Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg* (EC, 2000);
- *Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities*, Luxembourg (EC, 2002);
- *Interpretation Manual of European Union Habitats*. Version EUR 28. European Commission 2013;
- The European Union (Environmental Impact Assessment and Habitats) Regulations 2011;
- The European Communities (Birds and Natural Habitats) Regulations 2011;
- The Planning and Development Acts 2000-2018, and
- Relevant case law, particularly a recent ruling from the European Court of Justice Case C-323/17: Request for a preliminary ruling under Article 267 TFEU from the High Court (Ireland), made by decision of 10th May 2017, received at the Court on 30th May 2017, in the proceedings, People Over Wind, Peter Sweetman v Coillte Teoranta.

In light of the finding by the European Court of Justice in Case C – 323/17, it has been clarified that Stage 1 assessment needs to be based on the development proposal in the absence of site-specific mitigation. The source pathways for potential connectivity are therefore assessed carefully in consideration of the above ruling. An extract from the above ruling is provided herein: "*Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site*."

Stage 1 - Screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3):

i. whether a plan or project (in this instance the proposed works) is directly connected to or necessary for the management of the European sites, and
ii. whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on the European sites in view of their conservation objectives.

If the effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2 (AA). This report fulfils the information necessary to enable the competent authority to screen the proposal for the requirement to prepare an AA.

This report forms Stage 1 of the AA process and sets out the following information:

- Description of the proposed works;
- Characteristics of the proximal European sites; and
- Assessment of potential for significance effects of the proposed works on the European sites in question.

2.2 INFORMATION CONSULTED FOR THIS REPORT

Sources of data reviewed as part of the screening process for this project included (but were not limited to):

- Information provided by RPS design team on the location, design and project elements of the proposed project.
- Environmental Protection Agency – Water Quality information www.epa.ie, http://gis.epa.ie/Envision, www.catchments.ie
- ESRI Ireland - Mapping Themes www.esri-ireland.ie
- Geological Survey of Ireland – Geology, soils and Hydrogeology mapping and data www.gsi.ie
- Water Framework Directive website – www.wfdireland.ie
- National Parks and Wildlife Service – online European site network information, including site conservation objectives www.npws.ie

- National Parks and Wildlife Service – *Information on the status of EU protected habitats in Ireland (NPWS 2013a, 2013b).*
- National Biodiversity Data Centre – Information on location of EU protected habitats - www.biodiversityireland.ie
- Ordnance Survey of Ireland – Mapping and Aerial photography www.osi.ie

2.3 SCREENING PROTOCOL

The sequence of events when completing the AA Screening process is provided below.

2.3.1 Screening Sequence

- Definition of the zone of influence for the proposed works.
- Identification of the European sites that are situated (in their entirety or partially) within the zone of influence of the proposed works.
- Identification of the most up-to-date Qualifying Interests (QIs) for each European site occurring either wholly or partially within the zone of influence.
- Identification of the environmental conditions that maintain the QIs at the desired target of Favourable Conservation Status.
- Identification of the threats/impacts – actual or potential that could negatively impact the environmental conditions of the QIs within the European sites.
- Highlighting the activities of the proposed works that could give rise to significant negative impacts.
- Identification of other plans or projects for which In-combination impacts would likely have significant effects.

2.3.2 Screening Determination

In accordance with *Regulation 42(7) of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011)* as amended:-

> *The public authority shall determine that an Appropriate Assessment of a plan or project is not required where the plan or project is not directly connected with or necessary to the management of the site as a European site and if it can be excluded on the basis of objective scientific information following screening under this Regulation, that the plan or project, individually or in combination with other plans or projects, will have a significant effect on a European site*.

Further, under Regulation 42(8):-

(a) Where, in relation to a plan or project for which an application for consent has been received, a public authority makes a determination that an Appropriate Assessment is required, the public authority shall give notice of the determination, including reasons for the determination of the public authority, to the following—

i) the applicant,

ii) if appropriate, any person who made submissions or observations in relation to the application to the public authority, or

iii) if appropriate, any party to an appeal or referral.

(b) Where a public authority has determined that an Appropriate Assessment is required in respect of a proposed development it may direct in the notice issued under subparagraph (a) that a Natura Impact Statement is required.

3 PROJECT DESCRIPTION

The proposed development comprises a waste soils recovery facility. It comprises the importation of approximately 1.4Mm^3 of inert soil and stones material to fill quarry voids. In this regard, the purpose of the development is twofold. The first is to restore the site to in terms of its landform and agricultural use, to a state comparable to its nature prior to extraction activities commencing at the site. The second is to cater to a recognised shortage of waste disposal facilities for construction waste.

Following restoration, the land use will be agricultural.

The overall application site comprises 15.7 hectares approx., which extends to include all elements of the development including ancillary works areas such as welfare and operational facilities. The full extent of the proposed soils recovery development comprises the following structures and works:

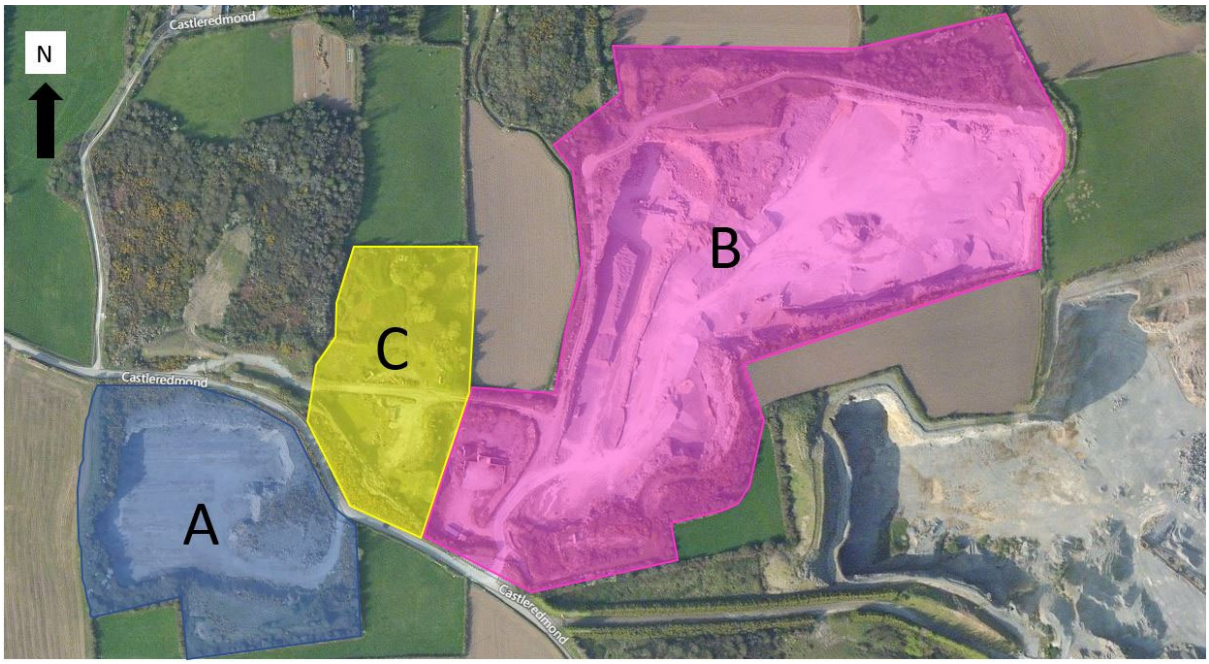
- Provision of connecting track between Midleton and Coppingerstown Quarry to include provision of hardstanding and car parking spaces.
- Drainage of the connecting track and hardstanding area to a soakpit via a fuel / oil interceptor.
- Provision of a quarantine area / shed.
- Installation of weighbridge, wheelwash, site office and welfare facilities.
- Removal of hedgerow / scrub and stone walls to northwest of entrance to Zone A, and subsequent installation of new post and chainlink fencing; lowering of hedgerow line to southeast of entrance to Zone A (as part of ongoing maintenance works).
- Infill quarry voids of approx. 9ha hectares with inert soils and stones material; total volume estimate of 1.4Mm^3.
- Final Landscaping / restoration of infill areas.
- Final removal of hardstand and site facilities (when extraction at neighbouring Coppingerstown Quarry also complete).

3.1 GENERAL SCOPE OF PROJECT

The overall site area comprises 15.7ha. Of this, approximately 9ha are permitted for extraction. Thus, the infilling proposed under this application also relates to approximately 9ha. The other ancillary elements identified above are within the wider 15.7ha site.

For ease of reference in the application reporting, the site has been subdivided into three separate and identifiable zones, Zones A, B and C. These are identified on **Figure 3.1** below.

Figure 3.1: Site Zoning



3.1.1 Nature of Imported Material

The nature of the material proposed to be imported to the subject site comprises inert soil and stones which fall under the European Waste Category of 17 05 04[1]. This material will largely originate from excavations to accommodate large scale infrastructural or other construction works. Material accepted at the site will be subject to acceptance criteria summarised in **Section 3.1.4**.

3.1.2 Phasing

All extraction activities have ceased in Zone A and therefore it is proposed that importation of material will commence in this location. Once sufficient material is imported to fill the majority of the void to the proposed final profile levels, the focus will shift towards final restoration of the site with appropriate levels of subsoils and topsoils and landscaping. It is envisaged that the finished profile and landscaping will tie Zone A in with the surrounding landscape.

Extraction is currently ongoing in Zone B and it is envisaged that once the permitted volumes are exhausted, that extraction activities will then focus on Zone C allowing importation and backfilling of Zone B. Finally, Zone C shall be filled following completion of all permitted extraction.

[1] Environmental Protection Agency, (2015) *Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-hazardous*. Dublin: Environmental Protection Agency

Landscaping and restoration of the furthermost areas of Zone B will be possible while extraction or importation works are underway in Zone C. Due to the requirement for access, however, to the overall site and to provide sufficient circulation and working space for ongoing extraction/ importation in Zone C, it is likely that landscaping for much of Zone B and all of Zone C will commence once all importation activities have been completed in order to enable a coherent approach and appropriately restore both zones.

3.1.3 Filling Approach

The EPA *Draft Guidance Note on Soil Recovery Waste Acceptance Criteria'* (EPA, 2018) sets out a high-level approach towards acceptance of soils material at such licensed facilities and any testing requirements recommended to be carried out. The guidance document states that material should only be accepted from the following donor sites:-

Table 3.1: Waste Acceptance

Donor Site Type	Suitability for Acceptance
Greenfield Sites:	Acceptable, subject to meeting agreed Waste Acceptance Criteria.
Non-greenfield sites where the risk of contamination from chemical or solid materials is low:	Acceptable, subject to meeting agreed Waste Acceptance Criteria
Non-greenfield sites where there is an increased risk of contamination from chemicals or solid materials:	Not acceptable – such materials should not be accepted at soil recovery facilities. Waste soil and stone from such sites should be transferred to an appropriately licensed landfill or recovery facility.

The guidance document also suggests procedures and methodologies for waste characterisation, soil trigger levels and groundwater monitoring. There is a network of new monitoring wells at the site. It is proposed under the current application to undertake regular monitoring for groundwater levels and groundwater quality at six locations. The frequency and reporting procedures will be determined by the EPA under the waste licence application.

Waste acceptance procedures based on the EPA guidance are proposed for the site and are summarised in **Section 3.1.4**.

3.1.4 Filling Procedures

Waste acceptance criteria and procedures at the site will be in accordance with the guidance set out in the EPA *Draft Guidance Note on Soil Recovery Waste Acceptance Criteria* and as specified in due course by the EPA in a waste licence. The guidance document states that material should only be accepted from the following source sites identified in **Table 3.2**.

Table 3.2: Waste Acceptance

Type of Source Site	Suitability for Acceptance
Greenfield Sites	Acceptable, subject to meeting agreed Waste Acceptance Criteria.
Non-greenfield sites where the risk of contamination from chemical or solid materials is low:	Acceptable, subject to meeting agreed Waste Acceptance Criteria
Non-greenfield sites where there is an increased risk of contamination from chemicals or solid materials:	Not acceptable – such materials should not be accepted at soil recovery facilities. Waste soil and stone from such sites should be transferred to an appropriately licensed landfill or recovery facility.

All hauliers must hold a valid waste collection permit which shall be presented to the facility prior to transportation of material onto site. Appropriate competent persons shall carry out invasive species risk assessments and waste characterisation. Waste Acceptance Criteria (WAC) results and all site investigation and laboratory reports (to comply with criteria below) shall be presented to the facility for review prior to material acceptance.

Following testing as per the criteria noted at section 3.1.5 below, if the material is deemed suitable for acceptance, then the customer will be informed in writing and notification will be given for presentation at on-site verification. Additionally, a Roadstone New Site Notification sheet must be completed by a competent person and reviewed by Roadstone and Roadstone chain of custody booklets shall be issued to site.

In addition to the criteria per the EPA draft guidance, an invasive species risk assessment will be carried out by appropriately skilled persons and site visits will be carried out to source sites if necessary. Representative spot samples will be taken at the rate of 1 sample per 2,000 tonnes of waste accepted and sent to laboratories if necessary for further analysis.

All loads in and out of the facility shall be weighed and issued with a docket providing the type of waste and customer details. A Waste Intake Log Sheet shall be filled out by the weighbridge clerk and signed by the driver for all loads in and out. It shall include details such as the date and time, waste permit no., vehicle registration no., name of haulier, net weight, comments, certificate of conformity no. and signatures of both the driver and clerk.

Imported waste shall not be processed in any capacity on site. If material arrives to site and is deemed to be unsuitable for depositing in the quarry void it will be refused, or if necessary to retain that material at a quarantine area until such a time that it is ready to be transported elsewhere for disposal as appropriate.

3.1.5 Waste Acceptance Criteria

The following criteria will be applied at the site to ensure waste acceptance at the site in line with the requirements of the EPA to accept soil and stones (LoW code 17 05 04). These procedures will ensure that only suitable material is actually accepted and deposited in quarry voids. It should be noted that the aforementioned EPA guidance document is a draft document at the time of the current planning application, and has not been finalised. In addition, these procedures may be subject to agreement with the EPA under a condition of any Waste Licence granted; therefore the procedures outlined here may be subject to change.

Greenfield Soil and Stone

A Letter of suitability for the first 5,000 tonnes of material received, and a further letter of suitability for each subsequent 5,000 tonnes of material received will be required.

Each letter of suitability shall be signed by a suitably qualified person and shall, at a minimum, state the following:-

- The waste is greenfield soil and stone.
- A description of the source and nature of the soil and stone.
- The location of the source of the soil and stone (including a map showing the source site boundary).
- The material is suitable for use as backfill within the facility.
- The material will not cause environmental pollution at the facility.

The draft EPA guidance document states that no requirement for testing greenfield soil and stone, unless directed by the Agency. However, it is advisable that the suitably qualified person relies on soil test results to confirm the greenfield status of the source site before signing the letter of suitability. When the material arrives at the soil recovery facility, a visual check is required to verify that the material is greenfield soil and stone.

Non-Greenfield Soil and Stone

Prior to accepting material from each individual source site, the Applicant shall obtain information on the past use of the site and shall reject non-greenfield sites where soil or groundwater contamination has been identified or where there is an increased risk of contamination being present. Soil and stone shall not be accepted from sites where activities in the past have involved the manufacture or storage of hazardous substances e.g. chemical manufacturing facilities, oil storage facilities, retail filling stations.

Basic characterisation, compliance testing and on-site verification shall be undertaken, as outlined in **Table 3.3** below and / or as revised by licence requirements.

Table 3-3: Waste Acceptance Criteria per EPA Guidance

Amount of Material	Testing Requirement	Frequency of Testing/Location of Sampling
Greater than 2,000 tonnes from a single source	Basic characterisation *	To be carried out off-site prior to agreeing acceptance of the waste at the facility.
	Compliance testing *	One representative sample shall be analysed for every 2,000 tonnes of material received at the facility. A portion of each sample shall be retained on site for three years and shall be available for inspection/analysis by the Agency.
	On-site verification * *	Every load received at the facility
Less than 2,000 tonnes from a single source	Basic characterisation *	Sampling shall be undertaken at the facility prior to the use of material as backfill. At least one representative sample shall be collected from every 2,000 tonnes of material from the collective of single sources, each of which is less than 2,000 tonnes * * * A portion of each sample shall be retained on site for three years and shall be available for inspection/analysis by the Agency.
	On-site verification *	Every load received at the facility

Notes:

* This constitutes a thorough determination, according to standardised analysis and behaviour testing methods, of the short and long-term leaching behaviour and/or characteristic properties of the waste. Parameters and trigger levels are to be agreed with the Agency.

* * Rapid check methods (e.g. visual inspection) to confirm that the waste is the same as that which has been subjected to compliance testing and that which is described in any accompanying documents.

* * * It is recommended that waste in this category is placed in the quarantine area until sampling is completed and the results are available to determine suitability for acceptance.

Soil Trigger Levels

Contaminant concentrations within the soil and stone must comply with soil trigger levels to be agreed with the EPA. They must focus on the requirement for material accepted at the facility to be uncontaminated and will be used for basic characterisation and compliance testing.

3.1.6 Lifetime of the Development

The applicant has applied for a permission with a duration of 18 no. years which allows for approximately 15 no. years of importation and 3 no. years of monitoring.

3.1.7 Ancillary Buildings and Facilities

The ancillary buildings and facilities required for the operation of the soils recovery facility are listed below. These are temporary facilities only to be provided for the duration of the soils recovery activities and will be removed from site as part of the final restoration works. Some of these items are already in place for the quarrying activity and will be utilised for and retained for the duration of recovery activities also.

- Site security facilities.
- Site office / staff welfare facilities.
- New wheelwash and weighbridge.
- Quarantine area for any imported material suspected of being contaminated or unsuitable for acceptable at the facility. This will comprise of a covered concrete slab area.

3.1.8 Surface Water Drainage

Surface water drainage will be installed adjacent to the new wheel wash and weighbridge. The surface water will pass through a petrol interceptor before flowing to a stone filled soakaway.

3.1.9 Restoration

The underlying concept for the end use of this site is to revert to agricultural use and to restore the land profile to approximately what it would have been prior to the commencement of extraction activities. It is proposed to profile the imported soils material according to a site-specific landscape plan.

In order to provide an economical and practical land package for modern day agricultural use, it is not proposed to restore field boundaries to those represented in historical mapping. Many of the pre-existing fields are of a small size and are unsuitable for the large machinery required to operate a modern sustainable farming enterprise.

Screening berms were previously provided to the existing quarrying activities as required by their planning permissions. In general, these will be retained in situ until infill is complete. This will ensure ongoing protection of the visual amenities of the area. As infill is complete the original topsoil stored in these bunds will be spread over the infill area.

3.2 EXISTING ENVIRONMENT

A site walkover was undertaken on 23rd May 2018 by RPS Ecologist Mr Conor Ruane and on 22nd August by Ecologist Karen Banks, Greenleaf Ecology.

The ecology of the site is described in full in Chapter 12: Biodiversity of the EIAR. In summary, the site comprises Fossitt (2000) habitat Active quarries (ED4) in the actively worked area of the site (Zone B) and Exposed calcareous rock (ER2) in areas where quarrying is completed (Zone A). The margins of the quarry and Zone C comprise predominantly of Scrub (WS1) and Recolonising bare ground (ED3). The majority of the site is bound by Hedgerows (WL1), with berms positioned near to the L-3626.

No species or habitats that are listed as the Qualifying Interests of the European Sites situated within 15km of the proposed site (**Table 3.5** and **Table 3.6**) were recorded during the site surveys undertaken in 2018.

3.2.1 Invasive Alien Species

Butterfly bush was present throughout the site. No High Impact species or species listed on the Third Schedule were recorded onsite

3.2.2 Hydrology

The site is located in the Owennacurra River surface water catchment within the South Western River Basin District. A regional hydrology map is shown as **Figure 3.2** below.

The Owennacurra River flows through Midleton town, approx. 1.5km to the west of the site. Downstream of Midleton town this watercourse is referred to as the Ballynacorra River which flows into Cork Harbour further south.

The northern section of the site is located in the Dungourney River catchment which flows in a westerly direction approx. 1.9km north of the site. The Dungourney River discharges into the Owennacurra River at Midleton town. The southern section of the site drains to an unnamed stream but which is referred to on EPA mapping as the West Ballynacorra Stream. The source of the West Ballynacorra Stream is a karst spring which is located approximately 650m to the south east of the proposed site. The West Ballynacorra Stream flows westerly and discharges into the Ballynacorra River estuary, which is part of the Great Island Channel SAC and pNHA and Cork Harbour SPA.

Other than the West Ballynacorra Stream, there are no other natural surface water features within the site or in close proximity to the boundary of the site. A local hydrology map is shown as **Figure 3.3** below and **Table 3.2** provides a summary of watercourses in close proximity to the proposed site.

Figure 3.2: Regional Hydrology Map

Figure 3.3: Local Hydrology Map

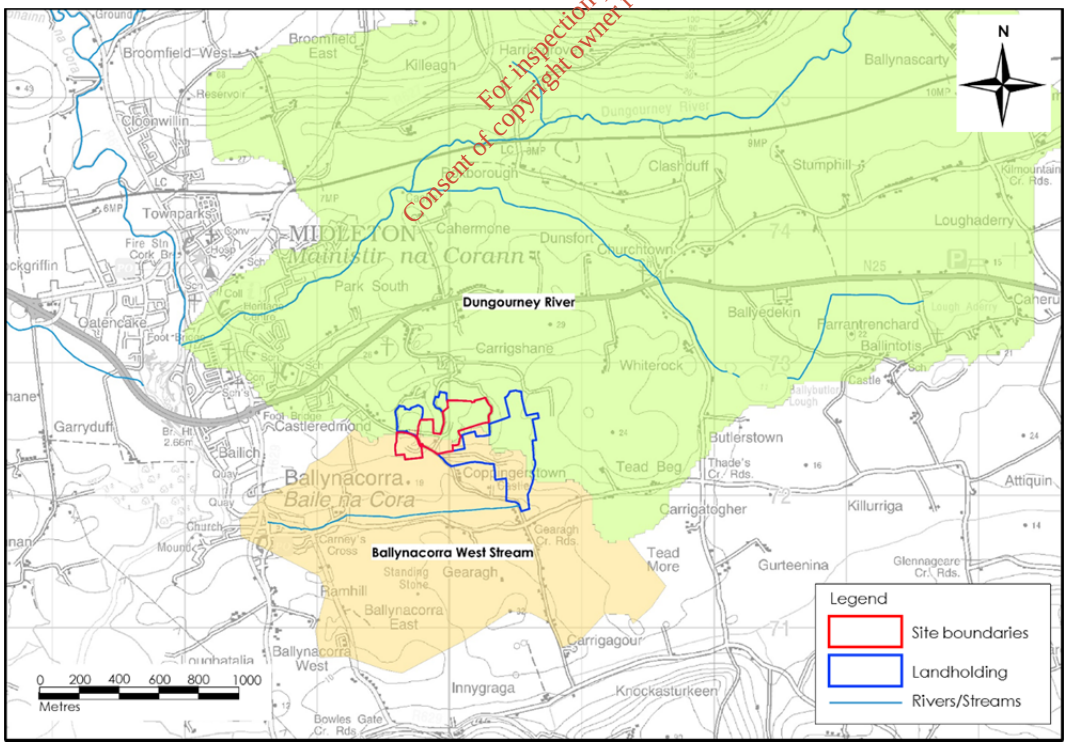


Table 3.4: Watercourses in Close Proximity to the Proposed Works

Watercourse	National Watercourse Code	Proximity to the Proposed Works	EPA Q - Value Rating 2004 -2016	WFD Status 2010 - 2015	Connectivity to Proposed Works
Ballynacorra West Stream	IE_SW_19K630910	c.0.65km	Not available	Unassigned	None
Dungourney River	IE_SW_19D070700	c1.3km	Q4 (Good Status) upstream of Midleton but reduces to Q3 (Poor Status) at Midleton Town	Poor	None

3.2.3 Flooding

The existing permitted quarrying activity allows extraction of limestone as far as 9mOD which is 1m above the water table.

No recurring flood incidents in the area of the proposed site were identified from OPW's indicative river and coastal flood map, which is shown as on **Figure 3.4** below. CFRAM mapping has been completed for the area of the proposed site (**Figure 3.5**). The CFRAM mapping shows that the proposed development site is not located within any fluvial or pluvial flood zone.

There is no text on local available historical 6" or 25" mapping for the proposed site that identifies areas that are "prone to flooding" within the site boundary, or downstream of the site.

Figure 3.4: OPW's Indicative River and Coastal Flood Map

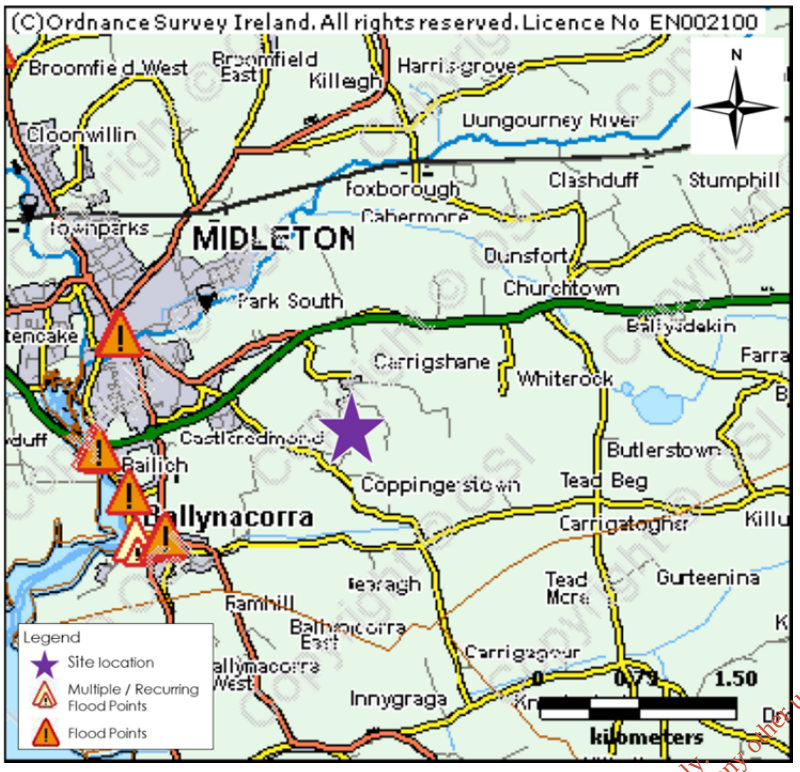
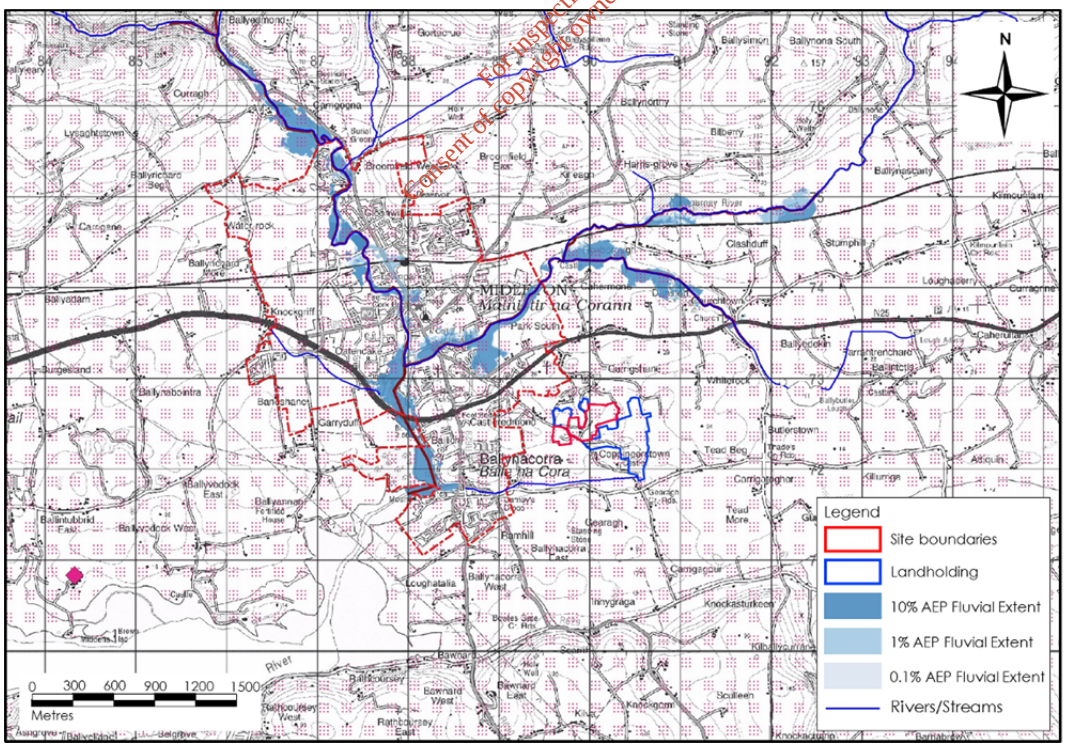


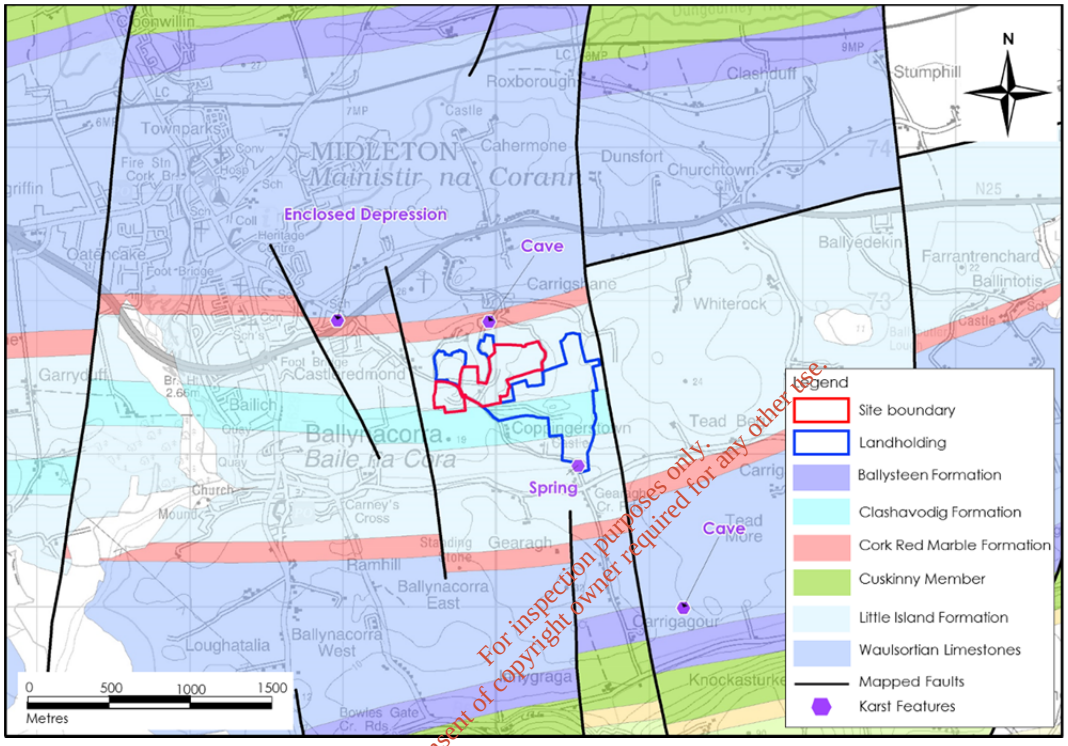
Figure 3.5: CFRAM Flood Risk Assessment Map



3.2.4 Soils, Geology and Hydrogeology

The GSI soils map (www.gsi.ie) for the site area indicates that the majority of the surrounding lands are overlain by Shallow well-drained mineral soils derived from mainly basic parent material (BminSW). In terms of bedrock geology, the Little Island formation composed of massive and crinoidal fine limestone underlies the site. This bedrock type is susceptible to karstification. A local bedrock geology map is shown as **Figure 3.6** below.

Figure 3.6: Local Bedrock Geology Map



The different bedrock units which underlie the site are mapped by the GSI as part of the same Regionally Important Karstified (diffuse) Aquifer. These rocks are devoid of intergranular permeability. Groundwater flow occurs in the many faults and joints, enlarged by karstification. There are no significant karstified rock features/weathering in the quarry walls of the site.

The groundwater flow direction in the area of the quarry is to the west/southwest. This is consistent with the local hydrology of the area which is towards the estuary of Ballynacorra River/estuary located to the southwest of the site. The proposed site is located within the Midleton GWB (IE_SW_G_058), which is assigned Good status under the 2010-2015 WFD round (www.catchments.ie).

3.3 DESCRIPTION OF THE EUROPEAN SITES

This stage of the screening for AA outlines the proposed projects zone of influence (ZoI) and describes the European sites within this ZoI. Current guidance (DEHLG, 2010) on the ZoI to be considered during the Screening for AA states the following:

> *"A distance of 15km is currently recommended in the case of plans, and derives from UK guidance (Scott Wilson et al., 2006). For projects, the distance could be much less than 15km, and in some cases less than 100m, but this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in-combination effects".*

A 15km buffer zone has been chosen as a precautionary measure, to ensure that all potentially affected European sites are included in the screening process, which is in line with *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities* (DoEHLG, 2009, rev. 2010). While there may be scientifically appropriate reasons for extending this further afield depending on the source, pathway and receptors of potential impacts, with regard to the current proposal, the 15km distance is considered acceptable to screen all likely significant effects that might impact upon the European sites.

In the case of the current project, and in consideration of the catchment and sub-catchments in which the proposed project will occur, a 15km ZoI is considered appropriate to ensure that all potentially affected European sites are included in the screening process.

The integrity of a European site (referred to in *Article 6.3* of the EU Habitats Directive) is determined based on the conservation status of the QIs or SCIs of the SAC or SPA. The QIs/SCIs[2] for each site have been obtained through a review of the COs available from the NPWS website www.npws.ie.

The European sites located within 15km of proposed access road are listed below**:-**

1. Great Island Channel SAC (Site Code: 001058).
2. Cork Harbour SPA (Site Code: 004030).
3. Ballymacoda (Clonpriest and Pillmore) SAC (Site Code: 000077).
4. Ballycotton Bay SPA (Site Code: 004022).
5. Ballymacoda Bay SPA (Site Code: 004023).

These sites are shown on **Figure 3.7**.

Connectivity from the development site to the European sites has been reviewed. Connectivity is identified via the potential source-pathway-receptor chain, such as any hydrological connectivity which may support direct or indirect connectivity to European Sites. The proposed site does not support habitat, hydrological or hydrogeological connectivity to site numbers 3, 4 or 5; therefore, these sites will not be impacted on and will not be considered further as part of this screening for AA. As outlined in **Table 3.5** and **Table 3.6** below, there is no surface water or habitat connectivity

[2] The habitats and species for which this site is designated

between the proposed site and Great Island Channel SAC and Cork Harbour SPA (site 1 and site 2); however, these sites are located in the same groundwater body as the proposed site.

Tables 3.5 and **3.6** also provide details on the Qualifying Interests of the sites and their distance and connectivity distances from the proposed development.

Table 3.5: European Sites (SPAs) within 15km of the Proposed Site

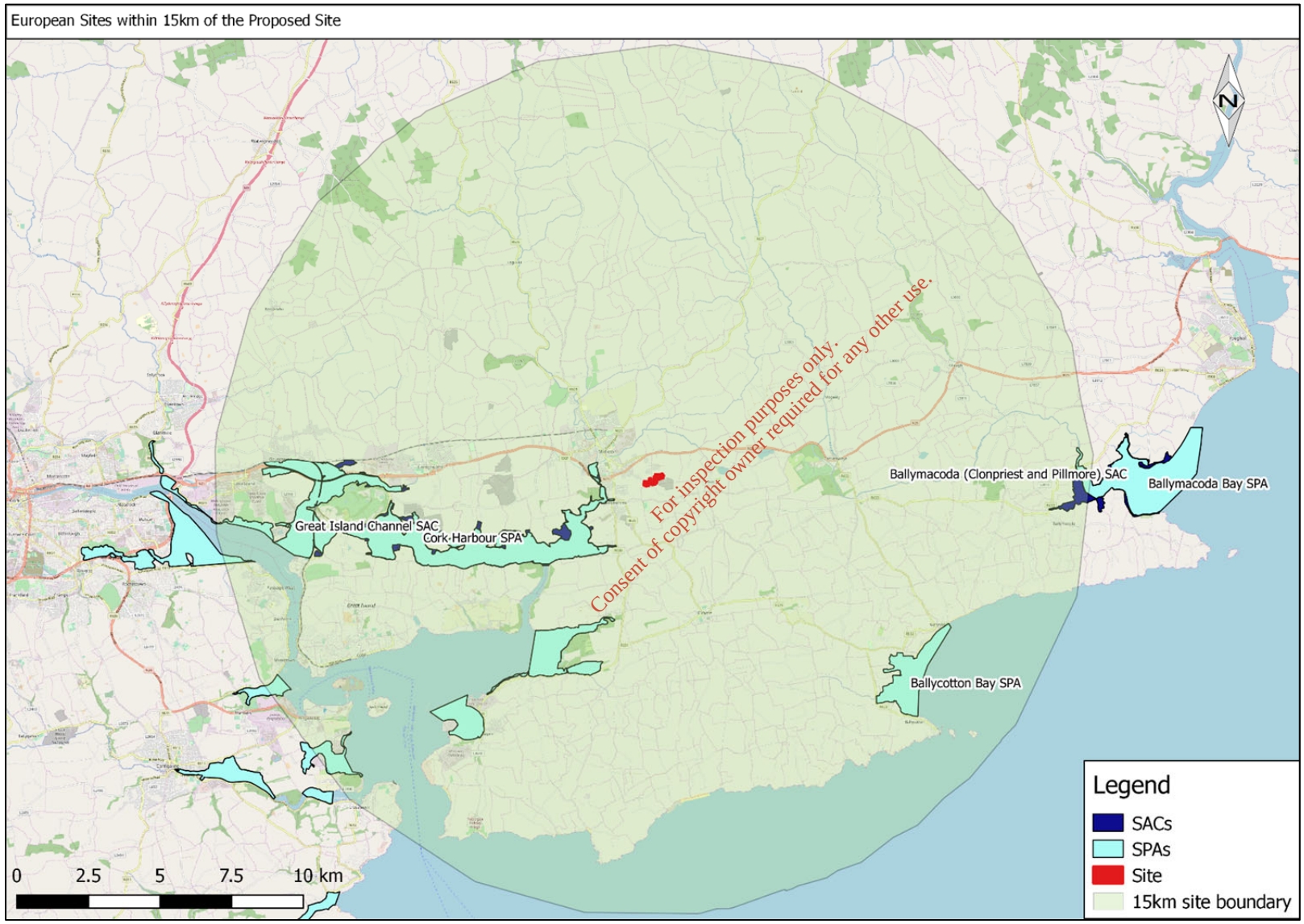
Site Name and Code	Qualifying Interests	Distance from Proposed Works	Connectivity
Great Island Channel SAC (001058)	**Annex I Habitats** Mudflats and sandflats not covered by seawater at low tide [1140] Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	1.11	There is no habitat or surface water connectivity. However, the proposed site and this SAC are both situated in the Midleton groundwater body.
Ballymacoda (Clonpriest and Pillmore) SAC (000077)	**Annex I Habitats** Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] *Salicornia* and other annuals colonising mud and sand [1310] Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] Mediterranean salt meadows (Juncetalia maritimi) [1410]	13.49	None

Table 3.6: European Sites (SPAs) within 15km of the Proposed Site

Site Name and Code	Special Conservation Interests (SCI)	Distance from Proposed Works	Connectivity
Ballycotton Bay SPA (004022)	Teal (*Anas crecca*) [A052] Ringed Plover (*Charadrius hiaticula*) [A137] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Lapwing (*Vanellus vanellus*) [A142] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Turnstone (*Arenaria interpres*) [A169] Common Gull (*Larus canus*) [A182] Lesser Black-backed Gull (*Larus fuscus*) [A183] Wetland and Waterbirds [A999]	10.03	None
Ballymacoda Bay SPA (004023)	Wigeon (*Anas penelope*) [A050] Teal (*Anas crecca*) [A052] Ringed Plover (*Charadrius hiaticula*) [A137]	14.37	None

Site Name and Code	Special Conservation Interests (SCI)	Distance from Proposed Works	Connectivity
	Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Lapwing (*Vanellus vanellus*) [A142] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Turnstone (*Arenaria interpres*) [A169] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Common Gull (*Larus canus*) [A182] Lesser Black-backed Gull (*Larus fuscus*) [A183] Wetland and Waterbirds [A999]		
Cork Harbour SPA (004030)	Wetland and Waterbirds [A999] Little Grebe (*Tachybaptus ruficollis*) [A004] Great Crested Grebe (*Podiceps cristatus*) [A005] Cormorant (*Phalacrocorax carbo*) [A017] Grey Heron (*Ardea cinerea*) [A028] Shelduck (*Tadorna tadorna*) [A048] Wigeon (*Anas penelope*) [A050] Teal (*Anas crecca*) [A052] Pintail (*Anas acuta*) [A054] Shoveler (*Anas clypeata*) [A056] Red-breasted Merganser (*Mergus serrator*) [A069] Oystercatcher (*Haematopus ostralegus*) [A130] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Lapwing (*Vanellus vanellus*) [A142] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Common Gull (*Larus canus*) [A182] Lesser Black-backed Gull (*Larus fuscus*) [A183] Common Tern (*Sterna hirundo*) [A193]	1.13	There is no habitat or surface water connectivity. However, the proposed site and this SPA are both situated in the Midleton groundwater body.

Figure 3.7: European Sites Located within 15km of the Proposed Site



3.3.1 Conservation Objectives of European Sites

The integrity of a European site (referred to in Article 6.3 of the EU Habitats Directive) is determined based on the conservation status of the qualifying interests of the SAC as set out above.

European and national legislation places a collective obligation on Ireland and its citizens to maintain at favourable conservation status areas designated as SACs and SPAs. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

Favourable conservation status of a habitat is achieved when:-

- Its natural range, and the area it covers within that range, are stable or increasing,
- 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.

The favourable conservation status of a species is achieved 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,
- 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 population on a long-term basis.

3.3.2 European Site Description and Conservation Objectives

3.3.2.1 Great Island Channel SAC

Site Description

Relevant extracts from the NPWS Great Island Channel SAC site synopsis are presented below. The full site synopsis can be seen at the following link;
https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY001058.pdf.

Great Island Channel stretches from Little Island to Midleton, with its southern boundary being formed by Great Island. It is an integral part of Cork Harbour which also contains several other sites of conservation interest. Geologically, Cork Harbour consists of two large areas of open water in a limestone basin, separated from each other and the open sea by ridges of Old Red Sandstone. Within this system, Great Island Channel forms the eastern stretch of the river basin and, compared to the rest of Cork Harbour, is relatively undisturbed. Within the site is the estuary of the Owennacurra and Dungourney Rivers. These rivers, which flow through Midleton, provide the main source of freshwater to the North Channel (NPWS, 2014c).

Qualifying Interests

The qualifying interests for Great Island Channel SAC are listed in **Table 3.5.** Threats and impacts for European Sites are presented in the Natura 2000 data form (2014-2019) for each site. Threats and impacts to Annex I habitats and Annex II species protected under the EU Habitats Directive are also outlined in the NPWS 2013 document '*The Status of EU Protected Habitats and Species in Ireland*'[3].

Table 3.7 presents the main threats, pressures and negative impact activities for Great Island Channel SAC, as quoted on the Natura 2000 Data Form for this European Site.

Table 3.7: Threats, Pressures and Impact Activities to Great Island Channel SAC

European Site	Threat Code[4]	Threat Type	Rank [5]	i (inside) / o (outside)/ b (both)[6]
Great Island Channel SAC	E01	Urbanised areas, human habitation	H	o
	D01.02	Roads, motorways	H	i
	F01	Marine and freshwater aquaculture	H	i
	A08	Fertilisation	M	o
	A04	Grazing	M	i
	K02.03	Eutrophication (natural)	M	i
	J02.01.02	Reclamation of land from sea, estuary or marsh	H	i
	I01	Invasive non-native species	M	i

3.3.2.2 Cork Harbour SPA

Site Description

Extracts from the Cork Harbour SPA site synopsis are presented below. The full site synopsis can be seen in full through the following link; https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004030.pdf.

Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay, Ringabella Creek and the Rostellan and Poulnabibe inlets. The site is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its populations of Black-tailed Godwit and Redshank. In addition, it supports nationally important wintering populations of 22 species, as well as a nationally important breeding colony of Common Tern. Several of the species which occur regularly are listed on Annex I of the EU Birds Directive, i.e. Whooper Swan, Little Egret, Golden Plover, Bar-tailed Godwit, Ruff, Mediterranean Gull and

[3] Article 17 & Article 11 Reports: http://www.npws.ie/article-17-reports-0/article-17-reports-2013
[4] Threat code follows reference list provided on threats, pressures and activities for European sites
[5] Threat, pressure and impact ranking H – High, M – Medium, L - Low
[6] Inside (i),outside (o) or both (b) of European site

Common Tern. The site provides both feeding and roosting sites for the various bird species that use it. Cork Harbour is also a Ramsar Convention site and part of Cork Harbour SPA is a Wildfowl Sanctuary (NPWS, 2015).

Qualifying Interests

The SCI found within the Cork Harbour SPA are listed in **Table 3.6**. The main threats, pressures and negative impact activities for Cork Harbour SPA are outlined in **Table 3.8** below.

Table 3.8: Threats, Pressures and Impact Activities to Cork Harbour SPA

European Site	Threat Code[7]	Threat Type	Rank[8]	i (inside) / o (outside)/ b (both)[9]
Cork Harbour SPA	E01.03	Dispersed habitation	L	o
	D01.02	Roads, motorways	H	o
	G01.02	Walking, horseriding and non-motorised vehicles	M	i
	F02.03	Leisure fishing	M	i
	D03.01	Port areas	H	o
	A08	Fertilisation	M	o
	F01	Marine and Freshwater Aquaculture	H	i
	G01.01	Nautical sports	M	i
	E01	Urbanised areas, human habitation	H	o
	E02	Industrial or commercial areas	H	o
	D03.02	Shipping lanes	M	i

[7] Threat code follows reference list provided on threats, pressures and activities for European sites
[8] Threat, pressure and impact ranking H – High, M – Medium, L - Low
[9] Inside (i)outside (o) or both (b) of European site

4 SCREENING ASSESSMENT CRITERIA

4.1 ELEMENTS OF THE PROJECT LIKELY TO GIVE RISE TO IMPACTS ON EUROPEAN SITES

There is no habitat or surface water connectivity between the proposed works and any European Site. Great Island Channel SAC and Cork Harbour SPA are hydrogeologically connected to the proposed site. As detailed in **Section 3.2.4**, the groundwater flow direction in the area of the quarry is to the west / southwest, towards the estuary of Ballynacorra River, which is part of Great Island Channel SAC and Cork Harbour SPA. Therefore, should there be a reduction in groundwater quality as a result of infilling at the proposed site there would be potential for an indirect impact downstream on the water quality of Great Island Channel SAC and Cork Harbour SPA. However, infill of the quarry will not affect groundwater quality for the following reasons:

- The infill material will comprise inert soil and stone (EU Waste Class 17 05 04), as such no contaminants will be present.
- All imported material shall be subject to waste acceptance criteria (as outlined in **Section 3.1.4**).
- All imported material will be subject to routine inspection.
- Inert soil and stone will not contain either organic matter or liquids that will form a source of organic contaminants of microbial pathogens, nor provide a substrate to feed microbial pathogens.
- There will be pre-agreed source sites for inert material ensuring no pollutants, unauthorised material or invasive species.

4.2 POTENTIAL DIRECT, INDIRECT OR SECONDARY IMPACTS OF THE PROJECT ON EUROPEAN SITES

4.2.1 Size and Scale

The proposed works are not within the boundaries of any European Site and the size or scale of the proposed works will not have a significant adverse effect on Great Island Channel SAC or Cork Harbour SPA.

4.2.2 Land Take

There will be no land take from any European Site.

4.2.3 Distance from European Sites or Key Features of the Site

The nearest European Sites to the proposed site are Great Island Channel SAC and Cork Harbour SPA, which are located c. 1.11 and c. 1.13km to the west of the site respectively.

4.2.4 Resource Requirements

The estimated total volume of material to be imported to the site is approximately 1.4M m^3 (2.52M tonnes) (Zone A = 100,000m^3 approx., Zone B = 1,140,000m^3 approx. and Zone C = 147,000m^3 approximately). The material required to infill the quarry voids will be comprised entirely of inert waste materials, therefore there will be no resource requirement for infill.

Fuel will be consumed by plant operating on the site and HGVs for transport of materials. There will be a requirement for water to serve both welfare facilities and the wheelwash unit. In terms of energy requirements, electricity is required only for welfare facilities and security such as CCTV and lighting only in the area of the proposed link road to Coppingerstown Quarry.

There is no potential for direct and indirect impacts to European Sites as a result of resource requirements.

4.2.5 Emissions

There is potential for emissions associated with the proposed project affecting air. Emissions to air will include fine particulate matter associated with the infill and movement of soil. Such emissions will not impact negatively on the qualifying features of the European Sites due to the distance between the works and the sites.

Infilling of the site with inert soil will not pose a significant risk to groundwater quality as no harmful contaminants will be present. In addition, inert soil and stone will not contain either organic matter or liquids that will form a source of organic contaminants of microbial pathogens, nor provide a substrate to feed microbial pathogens. Therefore, no significant groundwater quality impacts are anticipated. There is no pathway for surface water to leave the site other than by recharging into groundwater. However, as stated above, no significant groundwater quality impacts are anticipated.

Other potential emissions include the accidental spillage during refuelling of construction/excavation plant with petroleum hydrocarbons, which can pose a contamination risk to soils, groundwater, and associated ecosystems, and to terrestrial and aquatic ecology. As noted, there is no hydrological connectivity available. Therefore, there will be no impact on surface water quality. The employment of standard good practice pollution prevention measures will readily contain pollutants and no significant effects on European Sites as a result of accidental spillages are anticipated.

4.2.6 Transport Requirements

It is estimated that 56 truck-loads will arrive per day with soil in conjunction with ongoing extraction works at Midleton and Coppingerstown Quarries. Based on existing extraction demands at the quarries it is considered that at least 50% of these trucks will be utilised to both import soil and export stone in addition to the standard trucks that arrive empty to extract stone from Midleton and Coppingerstown Quarries. The total number of daily trucks on the L-3626 Rocky Road will be the already permitted 172 truck movements (86 in each direction) which shall provide for both stone extraction and soil importation. Transport requirements will utilise the existing road infrastructure. There will be no impact to European Sites in this regard.

4.2.7 Duration of Construction, Operation and Decommissioning

The applicant has applied for a permission with a duration of 18 no. years which allows for approximately 15 no. years of importation and 3 no. years of monitoring. The proposal allows for an estimated duration of approximately 8.4 years for the full soil recovery works but also allows for a 'worst case scenario' that extends the duration for the full soil recovery works to approximately 15.3 years.

4.2.8 Cumulative Impacts with Other Plans and Projects in the Area

As part of the screening for an AA, in addition to the proposed waste soils recovery facility, other relevant projects and plans in the area must also be considered at this stage. These plans and projects are considered further in this respect in **Table 4.1**.

Table 4.1: Projects or Plans which May Contribute to Cumulative or In-Combination Impacts

PLANS AND PROJECTS	KEY POLICIES/ISSUES/OBJECTIVES DIRECTLY RELATED TO THE CONSERVATION OF THE NATURA 2000 NETWORK	IMPACT
Land Use and Spatial Plans		
Cork County Development Plan 2014-2020	The policies and objectives of this plan are intended to contribute to the delivery of a number of key aims for the county as a whole. They are as follows: ▪ Enhanced quality of life for all ▪ Sustainable patterns of growth in urban and ▪ rural areas ▪ Sustainable and balanced economic investment ▪ An effective physical and community ▪ Infrastructure ▪ A quality built environment ▪ A network of enhanced natural resources ▪ Responsible guardianship of the County	Policies and objectives of the Cork County Development Plan 2014 – 2020 ensure that local planning applications comply with proper planning and sustainability and with the requirements of relevant EU Directives and environmental considerations, there is no potential for adverse in-combination effects on European Sites.
River Basin Management Plan 2018-2021	The project should comply with the environmental objectives of the Irish Draft RBMP which are to be achieved generally by 2021. Ensure full compliance with relevant EU legislation Prevent deterioration Meeting the objectives for designated protected areas Protect high status waters Implement targeted actions and pilot schemes in focus sub-catchments aimed at: targeting water bodies close to meeting their objective and addressing more complex issues which will build knowledge for the third cycle.	The implementation and compliance with key environmental policies, issues and objectives of this management plan will result in positive in-combination effects on European sites. It will not contribute to adverse in-combination or cumulative impacts with the proposed facility.
Pollution Reduction Plans		
IPPC Programme Local Authority Discharge	There are no IPPC Licence holders discharging to proximal or downstream European Sites. The nearest IPCC facility is Mr Mark O'Connor (Ref. No. P0895) which is located 2.5km to the south west of the proposed works.	No impacts

PLANS AND PROJECTS	KEY POLICIES/ISSUES/OBJECTIVES DIRECTLY RELATED TO THE CONSERVATION OF THE NATURA 2000 NETWORK	IMPACT
Major Accident Emergency Plans		
Seveso II Sites	There are no Seveso sites within the vicinity of the proposed works.	No impacts
Fisheries Plans		
Inland Fisheries Ireland Corporate Plan 2016 -2020 **The Inland Fisheries Act 2010.**	To ensure that Ireland's fish populations are managed and protected to ensure their conservation status remains favourable. That they provide a basis for a sustainable world class recreational angling product, and that pristine aquatic habitats are also enjoyed for other recreational uses. To develop and improve fish habitats and ensure that the conditions required for fish populations to thrive are sustained and protected. To grow the number of anglers and ensure the needs of IFI's other key stakeholders are being met in a sustainable conservation focused manner. EU (Quality of Salmonid Waters) Regulations 1988. All works during development and operation of the project must aim to conserve fish and other species of fauna and flora habitat; biodiversity of inland fisheries and ecosystems and protect spawning salmon and trout.	Implementation and compliance with the goals of the IFI corporate plan and legislation will result in net positive in-combination effects to European sites.
Other Water Services Strategic Plans		
Irish Water Capital Investment Plan 2014-2016	Proposals to upgrade and secure water services and water treatment services countrywide.	Likely net positive impact due to water conservation and more effective treatment of water.
Other Plans and Projects		
NPWS Conservation Management Plans	To maintain the favorable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Great Island Channel SAC. To maintain the favorable conservation condition of Qualifying Interests in Cork Harbour SPA.	The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. Generic conservation objectives aim to define favourable conservation condition for a particular habitat or species at that site to ensure the ecological integrity of these sites is maintained or restored. The resultant effects of conservation objectives are a net positive and there is no potential for adverse in combination effects on European sites.

PLANS AND PROJECTS	KEY POLICIES/ISSUES/OBJECTIVES DIRECTLY RELATED TO THE CONSERVATION OF THE NATURA 2000 NETWORK	IMPACT
Midleton GAA	Club house, pitches and associated facilities at Youghal Road, Midleton.	A screening for AA has been undertaken for the proposals which ruled out any significant effects on European Sites.
Irish Distillers	Change of use from warehouse to workshop with ancillary storage, training area and office, modifications to the façade, 2 no. attached exterior store areas and all ancillary site development works	A screening for AA has been undertaken for the proposals which ruled out any significant effects on European Sites.
Dunkettle Interchange	The proposed provision of an improved interchange at the location of the existing Dunkettle Interchange at the intersection of the N8, the N25 and the N40 in the townland of Dunkettle, Co. Cork.	A Natura Impact Statement (NIS) was prepared for the proposed development as part of the planning application. As a result of the appropriate design of the proposed development and proposed mitigation measures, the NIS concluded that the proposed development will have not result in impacts on the integrity of any European Site.
Water Rock Urban Expansion Area (UEA) Infrastructure Works	New services corridor link road, surface water drainage for new infrastructure and for UEA, upgrade of Cork/ Midleton Road and Northern Relief Road junction, traffic management measures, road to access railway station and bridge to cross over existing railway line, new railway stop, upgrade/ realignment of existing Water Rock road, wastewater pumping station for future UEA development.	A screening for AA has been undertaken for the proposals which ruled out any significant effects on European Sites.

4.3 CHANGES TO THE EUROPEAN SITES ARISING AS A RESULT OF THE FOLLOWING;

4.3.1 Reduction of Habitat

There will be no reduction in the habitat available in any European Site due to the proposed works.

4.3.2 Disturbance to Key Species

The habitats present at the proposed site are not suitable to support the SCI for Cork Harbour SPA. The proposed works will not cause disturbance to any key species.

4.3.3 Habitat or Species Fragmentation

The proposed works will not result in habitat or species fragmentation to European Sites.

4.3.4 Reduction in Species Diversity

The proposed works will not result in a reduction in the diversity of species or habitats in any European Site.

4.3.5 Changes in Key Indicators of Conservation Value

There will be no change to the key indicators of conservation value of any European Site due to the proposed works.

4.3.6 Climate Change

It is not anticipated that the proposed project will have any significant effects related to climate change.

4.4 LIKELY IMPACTS ON THE EUROPEAN SITES AS A WHOLE IN TERMS OF INTERFERENCE WITH KEY RELATIONSHIPS THAT DEFINE THE STRUCTURE AND FUNCTION OF THE SITE

The works will not directly or indirectly impact the Great Island Channel SAC and Cork Harbour SPA nor any other European site.

4.5 INDICATORS OF SIGNIFICANCE AS A RESULT OF THE IDENTIFICATION OF EFFECTS SET OUT ABOVE IN TERMS OF

4.5.1 Loss

There will be no loss to a European Site due to the proposed works.

4.5.2 Fragmentation

There will be no fragmentation to a European Site due to the proposed works.

4.5.3 Disruption

There will be no disruption to a European Site due to the proposed works.

4.5.4 Disturbance

There will be no disturbance to a European Site due to the proposed works.

4.5.5 Change to Key Elements of the Site

There will be no change to the key elements of any European Site due to the proposed works.

4.5.6 Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.

No elements of the project, either alone or in-combination with other projects or Plans, are likely to result in significant effects on European Sites.

5 CONCLUSION

This screening for AA identifies and assesses potential impacts which may occur as a result of the proposed works to the European Site network within a 15km zone of influence. The screening identified five European sites within a 15km radius of the proposed works:-

- Great Island Channel SAC (Site Code: 001058);
- Cork Harbour SPA (Site Code: 004030);
- Ballymacoda (Clonpriest and Pillmore) SAC (Site Code: 000077);
- Ballycotton Bay SPA (Site Code: 004022); and
- Ballymacoda Bay SPA (Site Code: 004023).

Only Great Island Channel (Site code 001058) and Cork Harbour SPA (Site code 004030) have indirect hydrogeological connectivity to the location of the proposed facility.

The potential impacts of the proposed facility have been assessed and no potential direct or indirect impacts upon the Qualifying Interests of any European Site have been identified. It is, therefore, concluded that the proposed Waste Soils Recovery Facility, Midleton, Co. Cork, either alone or in-combination with other plans and/or projects, does not have the potential to significantly affect any European Site, in light of their conservation objectives. Therefore, a Stage 2 Appropriate Assessment is deemed not to be required.