

Waste Soils Recovery Facility, Midleton, Co. Cork

Non-Technical Summary





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Environmental Impact Assessment Report Non-Technical Summary – Revised July 2020

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TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	SITE LOCATION AND CONTEXT	1
1.2	CONSULTATION	2
2	NEED FOR THE DEVELOPMENT AND DEVELOPMENT DESCRIPTION.....	5
2.1	NEED FOR THE DEVELOPMENT.....	5
2.2	SITE DESCRIPTION.....	5
2.2.1	Access	5
2.2.2	Boundaries and Land use / cover	5
2.2.3	Depths to Quarry Floor.....	5
2.2.4	Services and on-site Structures	6
2.2.5	Proximity to Residences	6
2.2.6	Watercourses, Bedrock and Aquifers.....	6
2.2.7	Protected Ecological Sites	6
2.2.8	Cultural Heritage	7
2.2.9	Landscape and Visual Context.....	7
2.3	DEVELOPMENT DESCRIPTION.....	7
2.3.1	Nature of Imported Material.....	7
2.3.2	Phasing	7
2.3.3	Access	8
2.3.4	Waste Acceptance.....	8
2.3.5	Traffic.....	9
2.3.6	Lifetime of the Development	9
2.3.7	Drainage	10
2.3.8	Ancillary Buildings and Facilities.....	10
2.3.9	Energy Requirements	11
2.3.10	Working Hours	11
2.3.11	Residues and Emissions	11
2.4	RESTORATION	11
2.5	WASTE LICENCE	12
2.6	OTHER PLANS AND PROJECTS WITH POTENTIAL FOR CUMULATIVE IMPACTS.....	12
3	PLANNING AND WASTE POLICY CONTEXT	13
4	ALTERNATIVES ASSESSED AND CONSIDERED.....	14
5	POPULATION AND HUMAN HEALTH.....	15

6 MATERIAL ASSETS.....16

7 TRAFFIC AND TRANSPORTATION.....17

8 NOISE AND VIBRATION19

9 AIR QUALITY AND CLIMATE.....21

10 SOILS, GEOLOGY AND LAND USE22

10.1 SOILS AND GEOLOGY 22

10.2 LAND USE..... 22

11 WATER SERVICES, HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK23

12 BIODIVERSITY24

13 LANDSCAPE25

14 CULTURAL HERITAGE27

15 INTERACTION OF IMPACTS AND SUMMARY OF MITIGATION29

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1 INTRODUCTION

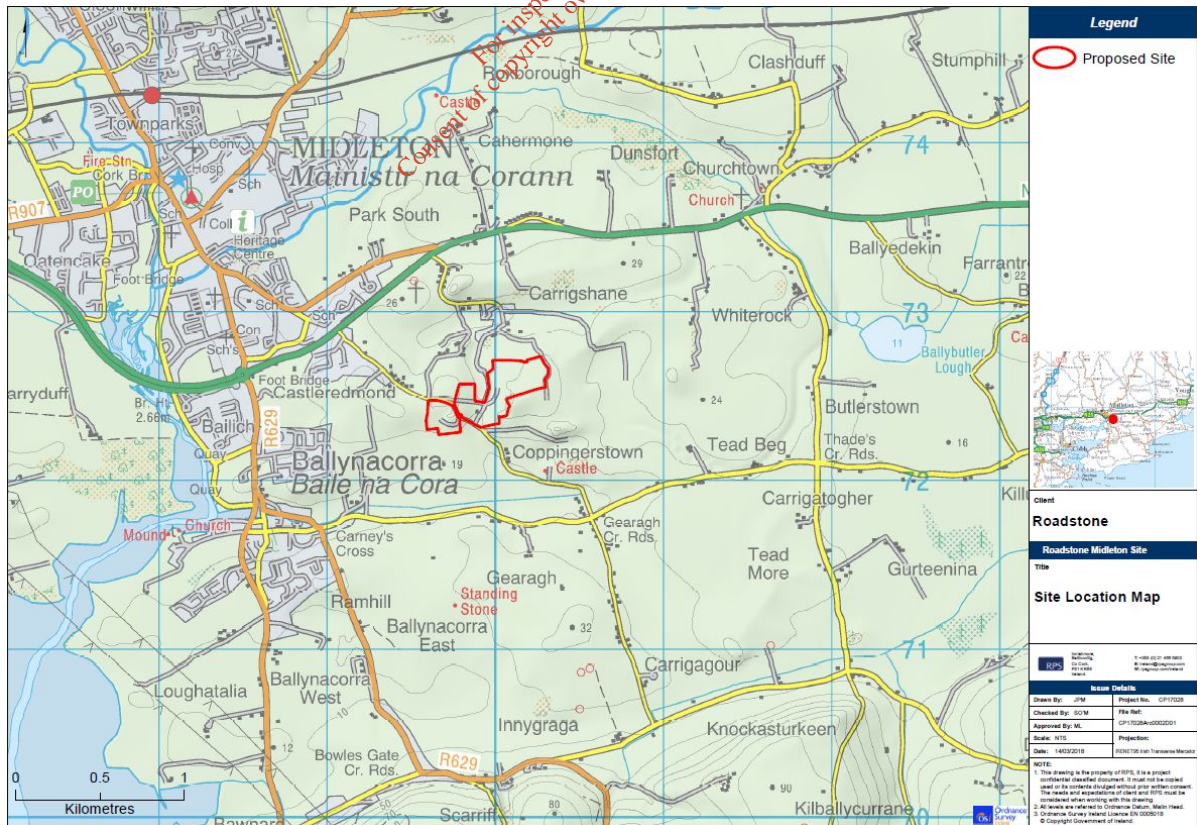
RPS has prepared this non-technical summary of an Environmental Impact Assessment Report (EIAR) prepared for a waste soils recovery facility in Midleton, Co. Cork. The EIAR has been prepared as part of an application for planning permission by Roadstone Limited to Cork County Council to import waste soil and stones material in order to fill quarry voids. It is proposed to restore the land to agricultural use following importation of approximately 1.4M m³ of inert soil and stones material. The EIAR will also form part of an application to the Environmental Protection Agency (EPA) for a Waste Licence in due course.

This report serves as a summary of the EIAR and has been prepared in conjunction with various European, Irish and Local legislation, policy and guidelines. The primary documents however, are the *EU Directive 2011/92/EU as amended by Directive 2014/52/EU* and *Draft Revised Guidelines on the Information to be contained in Environmental Impact Statements* (EPA, 2017).

1.1 SITE LOCATION AND CONTEXT

The subject site is in the townlands of Castleredmond, Carrigshane and Coppingerstown to the south west of Midleton, Co. Cork. It is located approximately 800m south of the N25 and is accessed from the L-3626 also known as Rocky Road, which is a local access road which travels southeast from the N25 serving areas of ribbon residential dwellings and the Midleton Downs residential estate as well as agricultural lands on either side of the road.

Figure 1.1: Site Location



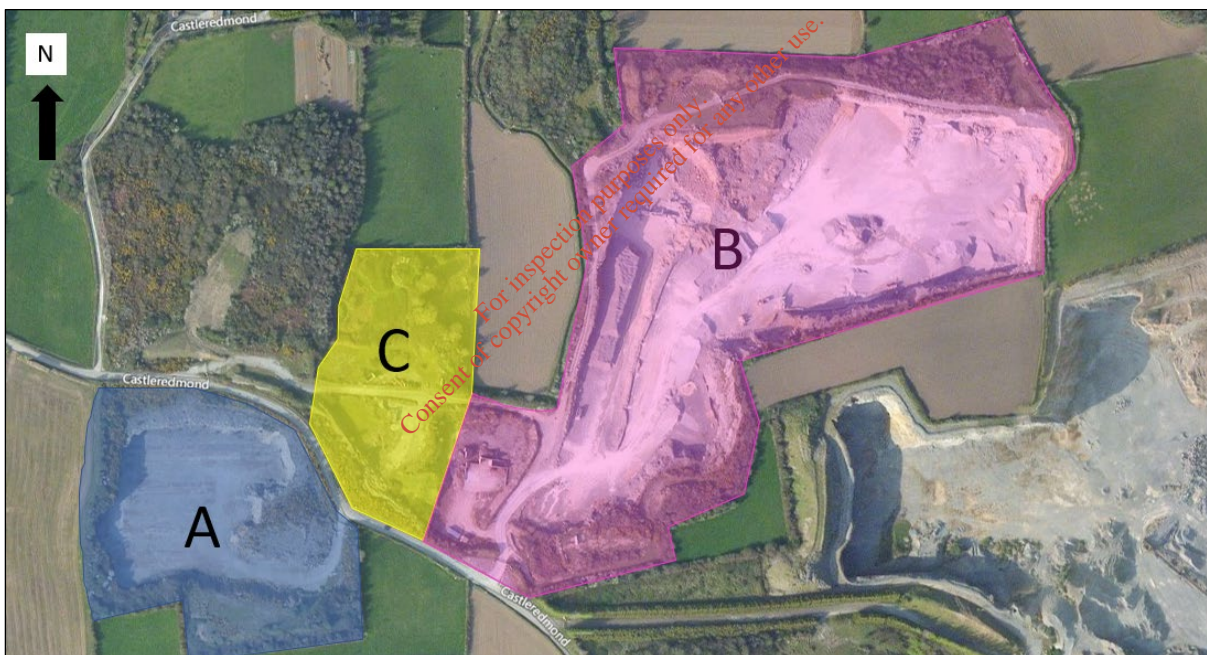
The site comprises an existing operational quarry (permitted at the site under Cork County Council Reg. Ref. 06/10088 and An Bord Pleanála Reference PL04.224250) of approximately 15.7Ha which is nearing exhaustion of material for extraction.

Quarrying activity has been underway at the site since before 1963. Much of the quarry has now been worked out with only a few years of extraction material remaining. For ease of reference in the report, the site has been subdivided into three separate and identifiable zones, Zones A, B and C which are at various stages of quarrying completion. These are identified on **Figure 1.2** below.

Zone A, which is located to the southwest of the L-3626 comprises approximately 3.2ha of land where all extraction has been completed.

Zones B and C are located to the northeast of the L-3626. Zone B is an active quarry where limestone extraction is still underway but is largely complete. Extraction is yet to be completed at Zone C. Part of Zone C is currently utilised for general circulation, storage and ancillary quarrying activities. The ongoing quarrying activities include blasting, processing, crushing and screening.

Figure 1.2: Zones A, B & C



Another quarry in the ownership of the applicant is located to the south east of the subject site as can also be partially seen on **Figure 1.2** known as Coppingerstown Quarry. This quarry is also currently active. It does not form part of the proposed soils recovery facility site or application.

1.2 CONSULTATION

An EIA scoping report was prepared and circulated in September 2018 to the following bodies with a request for commentary on the principle of the development and / or the proposed content and assessment approach proposed for the EIAR:

- Cork County Council
- Development Applications Unit of the Department of Culture, Heritage and the Gaeltacht incorporating the National Parks and Wildlife Service and National Monuments Service
- An Taisce
- Heritage Council
- Inland Fisheries Ireland
- Geological Survey of Ireland
- Environmental Protection Agency
- Transport Infrastructure Ireland
- Health Service Executive
- Minister for Communications, Marine and Natural Resources
- Bord Gáis Networks
- ESB Networks

A summary of the key issues noted by the responses of substance are set out in **Table 1.1** below, along with a note as to how these items are addressed in the EIAR:

Table 1.1: Summary of Responses to Scoping Report

Consultee	Response Received	Key Issues Identified in Response	How Addressed in EIAR
Environmental Protection Agency	Yes	Identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of a project on each of the factors listed in Article 3 of the Directive 2014/52/EU; Specify proposed measures to prevent contamination of rainwater and to ensure contaminated stormwater is not discharged into the environment; Identify and characterise the extent of groundwater or soil contamination, if any, beneath the facility; Identify and characterise historic and past activities at the site; Identify waste streams, processes to be used and detailed capacity calculations demonstrating the facility and equipment is of a sufficient size to handle the proposed volume of waste; Identify the nature of the licence that will be sought from the EPA, namely a waste or Industrial Emissions Licence; Have regard to the draft <i>Guidelines on the information to be contained in Environmental Impact Assessment Reports</i> ; Have regard to the EPA's <i>Advice Notes on Current Practice (in the preparation of Environmental Impact Statements)</i> September 2003; Satisfy the requirements of Directive 2014/52/EU	Addressed in each environmental specialist chapter, in particular Chapter 11 – Water Services, Hydrology, Hydrogeology and Flood Risk

Consultee	Response Received	Key Issues Identified in Response	How Addressed in EIAR
Transport Infrastructure Ireland	Yes	<p>Identify all methods / techniques proposed for any works traversing /in proximity to the national road network.</p> <p>Identify all haul routes and assess the network and any structures. Advised that approvals /permits may be required.</p> <p>Consult with the Local Authority / NRDO particularly regarding the N25 improvement scheme.</p> <p>Have regard to TII guidelines on traffic and transportation assessment, Road Safety Audit and Road Safety Impact Assessment</p> <p>Have regard to TII publications on assessment, design, construction and maintenance standards and guidance.</p> <p>Have particular regard to TII guidelines on Air Quality and Noise and Vibration as well as any future action plans for same in the relevant local authority.</p> <p>Have regard to previous EIS / EIAR and any conditions / modifications imposed in the area.</p>	Addressed in the Traffic Chapter
Gas Networks Ireland	Yes	<p>High level location of underground gas networks. Advised to make further contact prior to any excavations.</p>	No excavations will be undertaken as part of this development and therefore unnecessary to proceed further.

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2 NEED FOR THE DEVELOPMENT AND DEVELOPMENT DESCRIPTION

2.1 NEED FOR THE DEVELOPMENT

The need for, or purpose of, this development is twofold. The primary rationale for the development is to provide a suitable facility to accept inert soil and stones. There is a recognised shortage of such waste acceptance facilities. The secondary reason for the development is to restore the site on completion of the quarrying activities to a productive agricultural use which will be in keeping with its existing surrounding agricultural landscape.

2.2 SITE DESCRIPTION

2.2.1 Access

There are 2 no. vehicular access points from the L-3626 into Midleton Quarry landholding which are currently used; 1 no. to Zone A, and 1 no. to Zones B and C. The access to Zones B and C is currently in operation for extraction purposes. It is proposed to utilise both these access points for the infilling and landscaping processes.

There is another access to Zones B and C from the L-3626 on the west of Zone C, through adjacent land in the ownership of the Applicant which is not subject to this subject development.

The L-3626 currently accommodates two-way traffic allowing entry and exit to these points. The speed limit on this road is 50km/h from approximately the junction with the N25 as far as approximately the entrance to Zone A, and from this location east the speed limit is 80km/h.

2.2.2 Boundaries and Land Use / Cover

Site boundaries consist of chainlink and stockproof fencing, sod and stone ditches and hedgerows comprising a mix of gorse, hawthorn, ivy and other species. Some earthen berms / banks have been positioned inside the roadside boundaries together with planting such as hawthorn and tall trees which have provided additional screening to the site for the quarrying activities.

The majority of the site has no vegetation due to the quarrying land use. There are pockets of scrub like vegetation and poor grassland at the edges of Zones A and B, while the majority of Zone C is entirely vegetated with scrub such as gorse, hawthorn and bracken as quarrying has not yet commenced in this area.

2.2.3 Depths to Quarry Floor

Zone A where quarrying is completed comprises a void approximately 15m deep. The quarry floor lies at approximately 22mOD while the original ground levels around this zone vary from 37 to 30mOD.

Zone B quarry where extraction is ongoing has a quarry floor at approx. 9mOD which is above the watertable as permitted under Reg. Ref. 06/10088 and An Bord Pleanála Reference PL04.224250. Cliff faces and benches in Zone B range from approx. 15mOD to 43mOD.

When Zone C is extracted the quarry floor will be approx. 9mOD.

2.2.4 Services and on-site Structures

Overhead electricity cables traverse the site in a northwest to southeast direction across Zones A and C. A gas main is located approximately 415m to the east of the subject site.

There are no buildings in Zones A or C. In Zone B there is a concrete loading bay which will be removed prior to completion of current extraction works in Zone B, as well as a number of smaller concrete structures such as a pump house which shall be retained.

2.2.5 Proximity to Residences

There are residential dwellings to the northwest of the site along the L-3626, the closest of which is approximately 100m to the northwest of Zone A with improved agricultural grassland in between. There is a cluster of individual detached dwellings and farmyards to the north of Zones B and C, the closest of which is approximately 120m north of the site. There also are a number of detached dwellings and farmyards located to the south east of the site along the L-3626. The closest residence to the south east is approximately 230m from the subject site.

2.2.6 Watercourses, Bedrock and Aquifers

There are no watercourses traversing the site. The closest stream is Ballynacorra stream approximately 500m to the south. Rainfall / surface water soaks naturally to the ground and there are no discharge points within the site. The site is not located within a flood zone and no flood events have been recorded on the OPW flood website for the site.

The bedrock on the site comprises limestone with no known karst features within the site itself. However, there is a cave located to the north of Zone B.

The site lies within a regionally important karstified aquifer which does not form part of a drinking water protection area. The site has an extreme groundwater vulnerability rating as topsoil and subsoils have been removed from most of the site.

2.2.7 Protected Ecological Sites

Carrigshane Hill proposed Natural Heritage Area (pNHA) comprises sections of vegetated land north and west of Zones B and C. This pNHA also comprises an area within the north eastern section of Zone B which was permitted for extraction and is therefore substantially removed as extraction is almost complete in this area.

The closest Natura 2000 sites are within Cork Harbour located approximately 1.1km to the west; Cork Harbour SPA and Great Island Channel SAC.

2.2.8 Cultural Heritage

There is an entry to the Record of Monuments and Places (RMP) attached to the subject site, which states that a 'ringfort-cashel' once stood at the subject site (RMP code: CO076-066). The record entry goes on to state that in 1991 there was no visible trace of the structure. There are a further 4 no. entries on the RMP for sites within approximately 500m of the subject site, the closest of which is described as a 'tower house' (RMP code: CO076-051). This site is located approximately 400m south east of the subject site. The closest protected structure as listed on the Cork County Council record of protected structures is Lake View house which is situated approximately 900m to the west of the site (RPS ID – 00519).

2.2.9 Landscape and Visual Context

Scenic Route No. S51 (as set out in the Cork County Development Plan 2014-2020) which is the R630 Road from Ballynacorra via East Ferry to Whitegate and Roche's Point is located approximately 1km to the west. The majority of the site is located within a high value landscape which is characterised as *City Harbour and Estuary*; the exception is the north eastern most portion of Area B which is characterised as *Broad Fertile Lowland Valleys*.

2.3 DEVELOPMENT DESCRIPTION

2.3.1 Nature of Imported Material

Material proposed to be imported to the site comprises inert soil and stones which fall under the List of Waste (LoW) category of 17 05 04. This material largely originates from excavations accommodating large scale infrastructural or other construction works. Material may be accepted from both greenfield and brownfield sites, subject to acceptance criteria set out later in Section 2.3.4.

The estimated total volume of material to be imported to the site is approximately 1.4M m³ (2.52M tonnes) (Zone A = 100,000m³ approx, Zone B = 1,140,000m³ approx. and Zone C = 147,000m³ approx.).

The estimated annual intake is approx. 300,000 tonnes (166,666m³ approx.) per annum. This annual importation rate is less than the combined currently permitted extraction rates from both Midleton Quarry and the adjacent Coppingerstown Quarry of 500,000 tonnes per annum (approx. 208,333m³).

2.3.2 Phasing

It is proposed to commence importation of fill material in Zone A. Once sufficient material has been deposited to broadly tie in with the surrounding contours, subsoil and topsoils will be positioned to enable landscaping of the site. Extraction is currently ongoing in Zone B and once complete, extraction will then move to Zone C allowing importation and backfilling of Zone B. Finally, Zone C shall be filled.

Landscaping and restoration of the furthestmost areas of Zone B will be possible while extraction or importation works are underway in Zone C. The remainder of required landscaping (Zone B and all of Zone C) will commence once all importation activities have been completed.

2.3.3 Access

It is proposed that all HGVs carrying imported material will approach the site from the N25 and L-3626. All HGVs will enter the site at the main access point to Zone B to access a weighbridge. In the first phase of infilling (in Zone A), trucks will then exit via the same access, turn west and enter Zone A to deposit the imported material. The trucks will be required to return to the weighbridge in the northern lands before exiting the site completely and travelling west towards the N25 again. The weighbridge will be more conveniently located for the infilling of Zones B and C thereby reducing the number of localised turning movements. A new wheel wash will be installed in each of Zones A and B.

The access point to Zones B and C are sufficient to cater for ongoing extraction together with importation. It is proposed however to significantly cut back the vegetation and lower the boundary treatments on both sides of the existing access to Zone A to achieve 90m sightlines. New post and chainlink fencing will be provided on the northwestern side of the access while on the southeast, the existing hedgerow and vegetation shall be lowered,

Within the site, existing haul roads across the rock surface will be used as appropriate for the infilling activities. It is also proposed to connect Midleton Quarry with the adjacent Coppingerstown Quarry in order to optimise infrastructural requirements such as access to a wheel wash, weighbridge and welfare facilities at both quarries. The proposed connection will run in the same general location as an existing track with some of the footprint of the current track being set out for site services including weighbridge, wheel wash and office.

2.3.4 Waste Acceptance

The EPA *Draft Guidance Note on Soil Recovery Waste Acceptance Criteria* published for consultation in March 2018 (EPA, 2018) sets out a high-level approach towards acceptance of soils material at such licensed facilities and testing requirements recommended to be carried out. It also outlines waste acceptance criteria for backfill material. Such requirements and criteria will be adopted at the site and amended as specified in the waste licence to be issued by the EPA.

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 shall be presented to the facility for review prior to material acceptance.

Following testing as per the Waste Acceptance Criteria, 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 EPA draft requirements, an invasive species risk assessment will be carried out by appropriately skilled persons and site visits will be carried out to donor sites if necessary.

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.

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.

The imported material shall be deposited in such a manner as to achieve the proposed final profile as per the Landscape Plan. The majority of site boundaries such as hedgerows and stone walls shall be retained. Existing berms however, close to the L-3626 shall be removed and that soil spread over the site.

The material will be either tipped directly into a quarry void where suitable tipping locations are identified to accommodate truck access, or trucks will tip the soils material close to the active filling area and plant such as bulldozers will position the soils material in place.

2.3.5 Traffic

As set out earlier, Midleton and Coppingerstown Quarries are permitted to extract stone and export this from the site. Under these permissions, a total of 172 daily truck (HGVs) movements (86 trucks in each direction) travel the L-3626 from the 2 no. quarries west as far as the N25. It is proposed to maintain this number of HGVs as the status quo and balance importation and extraction activities to ensure there will be no increase in the combined current permitted 172 daily truck (HGVs) movements (86 trucks in each direction) travelling the L-3626. This will mean that extraction rates will be below their permitted levels.

There is the opportunity to avail of doubling up in HGV trips (e.g. HGVs importing material may exit the site with extracted material). However, there will be no increase in traffic volumes even when overlapping extraction and infilling activities occur as it is intended to balance importation and extraction to ensure truck movements are maintained at the current permitted rate.

2.3.6 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. Chapter 7 (Traffic) sets out two separate scenarios which portray possible lifetimes of the development. In summary however, the proposed and likely scenario utilises at least 50% of trucks for both importing and extraction the full 166,666m³ (300,000 tonnes) annual intake of soil to occur, which will result in a duration of approximately 8.4 years for the full soil recovery works. The worst case scenario separates all backfilling and extraction truck movements, meaning the annual intake of soils will be approx. 91,450m³ (164,610 tonnes) which will result in an extended duration of approximately 15.3 years for the full soil recovery works.

Extraction of the remaining stone at Midleton Quarry is dependent on a number of factors including demand for the material. Nonetheless extraction is permitted until 2023. After that period, in theory, the importation of soils will then be able to increase to 166,666m³ (300,000 tonnes) however this is

unlikely to occur due to ongoing extraction from Coppingerstown Quarry and the requirement to balance total HGV numbers to 172 movements. Additionally, there is a requirement to allow for market fluctuations as experienced in Ireland over the last decade in the construction sector in particular.

2.3.7 Drainage

Surfacewater across the entire site currently infiltrates to ground naturally. Due to the provision of the proposed link track and hardstanding area however, it is proposed to install a drainage system to collect surface water from the new track and hardstanding areas. This network of pipes shall drain surface water to a new soakaway located south of the existing entranceway to Coppingerstown Quarry and the water shall then infiltrate to ground. A new car parking area and a dedicated machinery refuelling area which will also serve as an overnight plant parking area, will drain to a full retention oil interceptor prior to discharge to ground via the new soakaway.

The wheel wash apparatus is a closed system which shall recycle water insofar as possible. Any additional spray or water which leaves the trucks once they leave the apparatus shall be collected in the abovenamed surface water collection system.

2.3.8 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 storage / office facilities
- New wheelwash and weighbridge
- Weighbridge office including welfare facilities; and
- Quarantine area for any imported material suspected of being contaminated or unsuitable for acceptable at the facility. This will comprise of a concrete slab area with quarantine shed and skips.

The site is already secure at all perimeters with a combination of chainlink and stockproof fencing, established hedgerows and sod and stone walls. These will be maintained until the recovery activities are complete and the site final restoration is complete. The existing site security will remain in situ including CCTV and gates, as well as the existing site office and welfare facilities.

It is proposed to provide a weighbridge, wheelwash, car parking and a quarantine area to the southeast of Zone B, adjacent to the link track to Coppingerstown Quarry thereby enabling use of the infrastructure for operations in both quarries (both recovery and quarrying) to increase efficiency of the overall business. A wheelwash is also proposed at Zone A.

2.3.9 Energy Requirements

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. The only additional requirement for energy is in the form of fuel for plant operating on the site. No fuel storage is proposed within the application site. An existing bunded fuel store owned and operated by the applicant at the neighbouring Coppingerstown Quarry will serve the proposed materials recovery operations also. Water Supply and Wastewater

Welfare facilities and the wheelwash currently on site are served by a borehole on site pumping groundwater to a tank. An existing pipe under the L-3626 provides water to Zone A. Wastewater from welfare facilities is collected by a licensed operator as required while water from the wheelwash is recycled for use again.

2.3.10 Working Hours

Current operational hours for extraction activities at the site comply with Condition No. 7 as set out in the grant of permission for Reg. Ref. 06/10088 (ABP PL04.244250). It is proposed that working hours for the backfill operations will be the same as those set out and currently operational, i.e. Monday to Friday 07.00 to 18.00, and 07.00 to 14.00 on Saturday. No operations shall take place on Sundays or Public Holidays.

2.3.11 Residues and Emissions

Emissions are expected from the proposed development in terms of noise, air quality, CO₂ and water.

The majority of noise, air quality and CO₂ emissions shall arise from the transportation of soils material to the subject site by HGVs. However, as set out previously, the quantum of HGVs shall be maintained and balanced with that currently operating within permitted extraction developments so there is no increase to HGV numbers travelling to or from the subject site. In this regard, there are no increased emissions expected to be produced as a result of the proposed development beyond what is currently operating.

There will be no point emissions in terms of air quality (dust) or noise. Ongoing air and noise monitoring has been undertaken in recent years as part of the permitted extraction development at Midleton Quarry. All such results are within the threshold limits and are summarised in the relevant chapters: Chapter 8 – Noise and Chapter 9 – Air Quality and Climate.

2.4 RESTORATION

It is proposed to profile the imported soils material according to a site-specific landscape plan and return the site to agricultural use. 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.

Existing landscaped berms will be retained in situ until backfill is complete. This will ensure ongoing protection of the visual amenities of the area. As backfill is complete the original topsoil stored in these bunds will be spread over the backfilled area.

2.5 WASTE LICENCE

The soil material proposed to be imported to the site is classed as waste and is allocated the List of Waste Code 17 05 04 which constitutes soils and stone. As it is proposed to import a total amount of waste greater than the threshold for a waste facility permit, granted by a local authority; a waste licence from the EPA is required. An application shall be made to the EPA following this application for planning permission to Cork County Council.

2.6 OTHER PLANS AND PROJECTS WITH POTENTIAL FOR CUMULATIVE IMPACTS

A desktop review of Cork County Council Planning Enquiry System, together with identification of potential plans and projects through the scoping process has produced the following list of plans and projects with the potential for cumulative impact together with the proposed development.

- Dairygold cheese production facility in Mogeely and discharge at Rathcoursey;
- Irish Distillers multiple developments;
- GAA planning applications;
- Dunkettle Interchange Upgrade; and
- N25 Carrigtwohill to Midleton scheme.

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3 PLANNING AND WASTE POLICY CONTEXT

Chapter 3 of the EIAR sets out the policy context for the proposed development in terms of both strategic planning and waste policy (national and regional level) and local statutory planning provisions. The following policy and guidance documents were interrogated:

- National Planning Framework
- National Development Plan 2018 – 2027
- Regional Planning Guidelines 2010 – 2022
- European Waste Framework Directive
- A Resource Opportunity Waste Management Policy in Ireland, 2012
- Construction and Demolition Waste: Soil and Stone Recovery / Disposal Capacity
- Waste Classification: List of Waste and Determining if Waste is Hazardous or Non-hazardous
- Cork County Development Plan 2014 – 2020
- East Cork Municipal Area Local Area Plan 2017
- Southern Region Waste Management Plan 2015-2021

The proposed development is supported by the principles of national, regional and county level policy. In this regard, it will serve a need which is identified at high level policy, and in a location which will not give rise to any conflict with local or county level statutory planning provisions.

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4 ALTERNATIVES ASSESSED AND CONSIDERED

The scope for alternatives to be considered and assessed was limited by the fact that the site has been chosen with reference to its former and ongoing use as a quarry with consequent voids remaining which present a suitable site for materials recovery. Within this confine however, a number of options were considered.

The first alternative considered was whether to expand the waste classifications to be accepted at the site beyond that currently proposed. Material comprising anything other than clean inert soil, however, would have potential for environmental impacts which may require specialist engineered site solutions or which could have potential for impact on groundwater and geology. Given the level of demand for recovery sites for clean waste from large scale projects occurring on greenfield uncontaminated sites it was deemed appropriate to propose recovery of class 17 05 04 only.

Some options of the extent of on-site facilities was also considered, such as a second weighbridge. The operations and management of the site however will allow for smooth operation with a single weighbridge only and accordingly it was deemed appropriate and in the interests of sustainable development not to propose a second unit.

Consideration was given to additional uses such as recreational and amenity for the final end use of the site. However, the Applicant wishes to retain ownership of the land and maintain an income from same. The site will require maintenance in the form of landscaping and possibly restoring ground levels after some settlement over time, and therefore an agricultural use is most appropriate to facilitate same. Additionally, it fully accords with the site's location within a high value landscape and the Cork metropolitan greenbelt.

A smaller recovery facility was initially proposed by the Applicant to Cork County Council in 2017. Having regard to the growing demand for such facilities within the region however, it was deemed appropriate following consultation with Cork County Council to withdraw that application and lodge a new application for a larger facility on the entire quarry lands, as now proposed.

5 POPULATION AND HUMAN HEALTH

This chapter of the EIAR assessed Employment, Amenity and Human Health in order to identify potential impacts on human beings.

Desktop surveys were undertaken to identify the baseline which included assessing data from websites such as CSO data, Cork County Council and Fáilte Ireland as well as field surveys identifying local businesses and residences.

The potential impacts identified included:

- temporary positive impact to employment as a direct result of prolonged activity at the subject site
- potential long term negative impact to residential amenity in terms of noise, traffic and air quality due to HGVs passing in close proximity to dwellings. Any such negative impact however will be largely minor in nature and limited in keeping with the current extraction activities and permitted development. This level of impact has not to date exceeded any relevant guideline limits.
- In relation to human health, there is a potential for minor negative impacts to residents in terms of air, noise and vibration from HGVs travelling on Rocky Road, as well as groundwater contamination from imported material. This level of impact however not to date exceeded any relevant guideline limits.

No specific mitigation is proposed in this chapter, however mitigation provided to lessen or reduce impacts associated with air quality, noise and vibration are referenced. Additionally, as all imported material will be inert and subject to rigorous acceptance procedures, there is no likely negative impact predicted to groundwater. In fact, the vulnerability rating of the underlying aquifer will be lessened due to the importation of soils and overburden.

6 MATERIAL ASSETS

The material assets chapter identifies potential impacts to 4 no. topics:

- Quarry Material
- Transport Infrastructure
- Utilities
- Waste

Given the overall approach proposed to maintain combined traffic (from quarrying and materials recovery) to and from the Midleton and Coppingerstown Quarry to permitted quarrying levels of traffic, the proposed development will result in a slower extraction rate from the quarry than may otherwise be the case. It will not however reduce in any way the extent of the quarrying resource which will ultimately be extracted.

The proposed development is predicted to have a significant positive impact in terms of waste management by providing a suitably located site of substantial volume to accept waste generated by the construction sector within the southern region. The use of the waste as an asset will have a significant positive long term benefit on the remediation of Midleton Quarry.

The proposed development will result in the movement of quarry and waste recovery related traffic over the local and national road network for a longer period of time than would be the case for the permitted quarrying activity at Midleton Quarry only. This has potential for minor impacts on the surfacing of the local road in particular due to the heavy loads being transported. This will be easily mitigated with regular inspections and improvement works as necessary with no residual impacts identified.

There will be no physical interaction between the proposed works and any existing utilities in the area. No. residual impacts are identified.

7 TRAFFIC AND TRANSPORTATION

A traffic assessment was undertaken based on projected volumes generated by the soils recovery works and the potential impact it could have on the L-3626 Rocky Road and the N25/L-3626 junction. The L-3626 local access road is a two lane single carriageway with sweeping bends in the horizontal alignment in the vicinity of the site and an undulating vertical alignment. The width of the carriageway varies between 7.0m and 7.5m, at the section closest to the N25, where some ribbon development residential dwellings are located. In the vicinity of the development site the L-3626 Rocky Road reduces in width to between 6.0m and 6.5m. There is an approx. 100m section of the L-3626 Rocky Road which reduces in width to 3.5m. However, it is noted that this road is being used currently by trucks hauling material from Midleton Quarry and historically by trucks going to Coppingerstown Quarry. Traffic Surveys showed that the 2018 AADT on the L-3626 Rocky Road is only 246 vehicles.

The preliminary estimated total volume of soil material to be imported to the site is approximately 1.4M m³ (2.52M tonnes) (Zone A = 105,000m³, Zone B & C = 1,300,000m³) with an annual intake of 166,666m³ (300,000 tonnes). This equates to circa 56 trucks a day arriving on site (112 truck movements) associated with the proposed soil recovery works. Currently Midleton and Coppingerstown quarries are allowed 172 daily truck movements (86 trucks in each direction) on the L-3626 Rocky Road under current combined permitted planning permissions. It is proposed that the future soil recovery work in conjunction with the ongoing stone extraction works will not exceed the level of traffic flow on the L-3626 Rocky Road, as currently permitted for Midleton and Coppingerstown quarries.

In relation to the duration of works, two scenarios were assessed, which included the expected scenario of at least 50% of the trucks will be dual utilised to both import soil and export stone and a worst case where there is a complete separation of truck use between the soil recovery and stone extraction works. For the first (and most likely expected) scenario it is considered that the duration of the works will be for 8.4 years.

It is evident that due to the low volumes on the L-3626 Rocky Road and the significant sections of ample road width, the additional vehicle numbers generated by the proposed development will not have a significant impact on the operating capacity of the L-3626 Rocky Road. The L-3626 Rocky Road has sufficient capacity and road width adjacent to the areas of ribbon residential dwellings to allow two trucks to pass without obstruction. South of the ribbon residential dwellings, the road width of the L-3626 Rocky Road reduces to approximately 3.3m - 3.5m wide for approximately 100m where two way truck movement could be obstructed. However, as the road alignment is relatively straight along this section of the road and the verges along the side of the road are reduced in height, there is ample forward visibility to allow vehicles travelling in opposite directions to clearly see approaching vehicles.

A capacity assessment of the Rocky Road junction with the N25 showed that the soil reprofiling works will have an insignificant impact on the operating preformation of this junction during peak hours. The capacity assessment predicts a negligible increase in delays on the L-3626 Rocky Road throughout the works.

It is proposed to utilise the functioning access to Midleton Quarry and to use the previously used access on the opposite side of the road for the soils recovery works. The functioning existing access has previously been substantially improved in order to accommodate industrial heavy goods traffic. There is sufficient space for 2 no. trucks to pass in parallel at the access and there is a bound surface

with sightlines of approximately 100m in each direction. It is proposed to significantly cut back the vegetation and lower the boundary treatments on both sides of the existing access (which are under the ownership of the applicant) to optimise sight visibility to both the north and south of the access junction. It is considered that the 90m sightlines will be achievable once the vegetation is cleared. A 90m sightline is in accordance with the standards stated in TII document DN-GEO-03060 for a 60km/h design speed, which exceeds the recorded 85% percentile speed on the L-3626 Rocky Road.

It is proposed to provide advance warning signage of the access junctions. The signs will be located along the L-3626 Rocky Road at 50m and 100m distances in both directions. In addition, it is proposed to include additional warning signage on the L-3626 Rocky Road on approach to the section where the road width is reduced. The appropriate signage will be a *'Road Narrows on Both Sides'* sign with a Supplementary Plate included stating *'Ongoing Traffic in Middle of Road'*. If granted planning permission, the applicant will prepare a full Operating Traffic Management Plan. The characteristics of the Operating Traffic Management Plan will be agreed with the Local Authority.

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8 NOISE AND VIBRATION

The most sensitive NSLs identified for this assessment, based on the nature, extent and location of the proposed development, are residential dwellings close to the subject site as outlined earlier. The main noise sources in the study area comprise quarrying and extraction activities, traffic noise from Rock Road and the N25, and agricultural practices. There are no known facilities operating vibration sensitive equipment within 300m of the proposed road. Additionally, no cultural heritage features which could potentially be susceptible to vibration impacts were identified.

The baseline noise survey was carried out in accordance with the EPA *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)* (EPA 2016) on 23rd and 24th May 2018. Four short-term measurement locations were identified along the extent of the scheme.

The works required during the operational stage include construction of the Coppingerstown link track, importation of materials and finally remediation. Site set up will comprise installing hardstanding, a quarantine shed, site offices / facilities, a weighbridge and wheel wash. The busiest and longest phase of the development will be importation of the soils material which shall comprise the use of a variety of equipment including trucks, dozers and vibration rollers to import to the site and deposit it in the relevant location depending on the phase of implementation at the time.

The remediation phase will comprise depositing soils, contouring same to shape the final form of the landscape and planting. It is considered that most of the importation activities and subsequent required machinery is quite similar in nature to the current extraction facilities and therefore no major change in noise levels is predicted. There will be vehicular movements to and from the site which have the potential to generate noise and vibration.

The assessment undertaken has regard to the fact that traffic is not proposed to increase above the existing permitted levels on Rocky Road. The assessment considers that the development will not result in cumulative noise impact greater than 1 dB and confirms that this increase is negligible and the resultant impact is typically imperceptible.

Once all extraction has been completed at the site, 50% of all HGV trips will involve an empty truck as is the case currently with just extraction underway and therefore noise levels are not expected to increase once extraction is completed.

The backfilling works themselves also have potential for noise generation. The results of the assessment indicate that construction noise levels at varying distances from the proposed works areas are within the NRA guidelines for construction noise levels. The predicted noise levels are below the maximum permissible noise level.

Quiet working methods will be employed on the scheme insofar as possible within the parameters of the works proposed. This includes use of the most suitable plant, reasonable hours of working for noisy operations, taking economy and speed of operations into account. Working hours at the site during the operational phase will generally be limited to 07:00 to 18:00 Monday to Friday and 07:00 to 14.00 on Saturdays. Work on Sundays or public holidays are not expected to be necessary, however in the event they are this will be undertaken in consultation with Cork County Council.

It is anticipated that the levels of vibration generated by the works associated with the proposed scheme and haulage of material to the site compounds and subsequent movement to construction sites/area of works would be below the criteria specified in relevant BS standards, as the level of vibration from these activities would not be significant.

Following final restoration of the site, there will be a net positive permanent residual impact on noise as a result of the proposed development as reverting the site to agricultural use will result in occasional machinery use, similar in nature to surrounding land uses.

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9 AIR QUALITY AND CLIMATE

Section 9 of the Environmental Impact Assessment Report (EIAR) assesses the Air Quality and Climate impacts associated the proposed soil recovery activity which comprises the importation of inert soil material to fill existing quarry voids. As this activity will occur simultaneously with the existing quarrying activity, this chapter considers the combined implications of both activities.

Dust and increased traffic volumes associated with the subject site is likely to be the main impact source. When the activities cease post remediation there will be no potential for impact on air quality or climate.

Dust is considered a risk of pollution from the proposed development and in combination with the existing quarrying operation. There is a risk that the dust may cause an impact to sensitive receptors such as residential houses in close proximity to the source of the dust generated. In order to mitigate dust emissions during the construction / operational phase, a dust minimisation plan will be prepared. This dust minimisation plan will include a number of mitigation measures that provided the applicant/operator adheres to good working practices and the dust mitigation measures, the dust generated are assessed to be minimal and are unlikely to cause an environmental nuisance.

Monitoring on dust deposition is to continue at the seven existing monitoring locations (per the existing quarrying permission) to assess the potential impact of the combined materials recovery and quarry activities and to inform the dust minimisation plan. The Applicant /Operator will be required to maintain monthly dust levels below the recommended guideline for the protection of human health and the environment. Where the dust levels are measured above these limits, the dust minimisation plan will require revision.

Traffic emissions are considered the principal off-site risk of pollution to the atmosphere from the proposed development in operation with the existing quarrying operation. This activity will generate levels of typical exhaust emissions. No project specific mitigation measures have been identified but emissions of pollutants from road traffic can be controlled by either controlling the number of road users or by controlling the flow of traffic.

Post remediation, the operational sources of pollution (i.e. dust and traffic) would be eliminated and there would cease to be any potential impact to air quality for this phase.

The climate assessment was carried out to identify sources and quantify total GHG emissions generated from the construction activities associated with the proposed development. These sources include:

- Embodied emissions in site materials relative to other materials;
- Direct emissions from plant machinery/equipment;
- Transport emissions from vehicles importing/exporting material to and from the site.

In terms of the risk of major disasters which are relevant to the project, the main potential risks include climate induced flooding and extreme weather events. A flood risk assessment of the proposed development is presented in Chapter 11 of this EIAR. There is no flood risk identified at the site.

10 SOILS, GEOLOGY AND LAND USE

10.1 SOILS AND GEOLOGY

The existing environment of the proposed site of the soil's recovery activity in terms of soils, geology and land use was analysed using data collected from a desk study review, site walkover survey and a site investigation programme. The site is underlain by karstic rocks from the Little Island Limestone Formation which show evidence of weathering and faulting. Much of the overburden deposits have been removed from the site and there are many areas of outcropping bedrock. Where overburden exists, it is classified as Till derived chiefly from limestones (TLs) and can be described as orange brown clayey Till. One geological heritage site has been identified with 2km of the proposed road development.

Potential impacts during the importation/operational phase may arise from the following activities: earthwork operations, exposure of features of geological importance, potential for the import of contaminated soil and accidental spillages.

A series of measures have been proposed to mitigate the impacts associated with the above including:

- Adherence to approved filling procedures, topsoil replacement, stabilisation techniques, assessment by an onsite geotechnical engineer
- Provision of purpose designed bunded tanks, fuel oil interceptor, containment measures and emergency procedures
- Adherence to established operational waste acceptance procedures

Once the mitigation measures proposed have been employed, there are no significant negative residual impacts associated with the proposed development site.

10.2 LAND USE

The lands in the vicinity of the proposed development are of high agricultural quality. The enterprises in the vicinity are in cereals, maize and livestock.

Livestock could potentially be impacted by reason of noise, dust or traffic associated with the development; with dust having potential to impact on crops also. However, the measures proposed to mitigate against these items elsewhere within the EIAR will also sufficiently mitigate for potential impact on agricultural practices with the resulting impact being considered 'Imperceptible/Not significant'.

11 WATER SERVICES, HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK

The proposed infill site is an existing limestone quarry that is located east of Midleton town and on a surface water catchment divided between the Dungourney River which flows to the north of the site and the West Ballynacorra Stream which flows to the south. Both watercourses drain westerly towards the Ballynacorra River estuary. There are no streams or drains (surface water connections) within the site itself or near the proposed site that drain into either the Dungourney River or the West Ballynacorra Stream. Most of the rainfall (and subsequent runoff) that lands on the site percolates down through the limestone rock and into the underlying groundwater table which exists below the floor of the quarry (the quarry floor is dry).

Based on a flood risk assessment undertaken for the proposed development, the site or the surrounding lands are not located in a mapped flood zone. There are also no known recurring flooding issues in the locality of the site or surrounding lands.

The limestone bedrock underlying the site and the region itself is classified as a regionally important aquifer as most wells drilled in this aquifer type are very productive.

Investigations undertaken at the site show that the groundwater flow direction underneath the site is westerly/south-westerly towards the Ballynacorra River estuary. Results of groundwater sampling at the proposed site show that the groundwater quality is good and typical of a regionally important limestone aquifer. There are several private residential dwellings in the area of the site that use groundwater wells as a water supply. Some of these wells are located to the west of the site and are therefore downstream of the proposed development in terms of groundwater flow.

In terms of ecological conservation sites, Great Island Channel SAC (Special Area of Conservation) is located approximately 2km to the west of the proposed infill site. Groundwater flow from the area of the proposed development is expected to flow towards the Great Island Channel.

The proposed development comprises importing inert soil and stone to infill the existing quarry void. Infilling of the site with inert soil will pose a low risk to groundwater quality (and downstream features such as local wells and ecological conservation sites) as no harmful contaminants will be present. Due to the absence of surface water flowpaths between the site and the local stream/river there is no potential to impact on local watercourses.

Potential pollution sources such as oils and fuels will be present on-site, but these sources are common to all construction sites (such as road works, construction and industrial sites). These potential contamination sources are to be carefully managed at the site during the construction and operational phases of the development and measures are proposed within the EIAR to deal with these potential minor local impacts. There will be no release of domestic wastewater as it will be contained and then moved off-site to waste facility.

As part of the waste licence, groundwater quality monitoring will be undertaken on a regular basis during and after the infilling phase to ensure water quality is not affected in any manner.

12 BIODIVERSITY

Habitats present at the proposed site comprise active quarries, exposed calcareous rock, scrub, recolonising bare ground and buildings and artificial surfaces. Much of the site is bounded by hedgerows. Protected species recorded at the site include foraging bats (common pipistrelle, soprano pipistrelle, Leisler's, brown long-eared and *Myotis* species) and badger. No evidence of roosting bats or badger dens was recorded at the site or its' environs. No bird species of High or Moderate Conservation Concern (Red or Amber listed respectively) were identified during the site surveys. Raven (a Green listed species) was recorded nesting in the quarry face in two locations.

The proposed site is located c. 1.1km from Cork Harbour SPA and Great Island Channel SAC and pNHA. A Screening for Appropriate Assessment was prepared for the proposals by RPS for submission with a Planning Application in January 2019. This screening concluded that the proposed Waste Soils Recovery Facility, either alone or in-combination with other plans and/or projects, would not have the potential to significantly affect any European Site, in light of their conservation objectives. Cork County Council during its assessment of the proposals concurred with this assessment. On foot of screening by the EPA in June 2020 in respect of a licence application however, the EPA determined that an Appropriate Assessment of the proposed activity is required based on potential hydrological connectivity via groundwater to Cork Harbour SPA and Great Island Channel SAC. An NIS was therefore prepared. This NIS concludes that subject to mitigation measures specified there will be no significant adverse effects on the integrity of Cork Harbour SPA or Great Island Channel SAC in view of the sites conservation objectives and that the conservation status of the qualifying interests will not be compromised by the proposal either directly, indirectly or cumulatively.

Carrigshane Hill pNHA is in three sections, two of which are adjacent to the proposed site. The third is located within the north-east area of the proposed site; as such the majority of this section of the pNHA has already been excavated, with a small area of scrub remaining. No works are proposed to the two intact areas of Carrigshane Hill pNHA. No significant impacts on Carrigshane Hill pNHA as a result of the proposed infill and landscaping proposals are anticipated.

Potential impacts on habitats are the long-term/ permanent loss of 340m² of hedgerow. Potential impacts on fauna are temporary indirect impacts on badger and the loss of nesting habitat for Raven, a species that is of low conservation concern.

With mitigation measures in place, the residual impacts of the proposed Waste Soils Recovery Facility will be limited to the loss of 340m² of hedgerow, an adverse impact which is significant at the local level.

13 LANDSCAPE

This chapter assesses the potential landscape and visual impact on the surrounding area of the proposed waste soils recovery facility at, and subsequent restoration of, Midleton Quarry, Co. Cork during construction/operation and post restoration stages. The methodology for the LVIA has been derived from *Guidelines for Landscape and Visual Impact Assessment*, Third Edition (The Landscape Institute and Institute of Environmental Management & Assessment, 2013) (GLVIA3).

The proposed development is located directly within the Undulating Agricultural Patchwork Landscape. The proposed development will not noticeably alter the local topography until the final restoration stage as the activities associated with the soils recovery facility will be located within the quarry. This landscape due to its undulating nature has potential to quickly absorb any slight changes. This extensive landscape therefore will overall have negligible changes at short to medium distances from the proposed site as it is located within an existing quarry site that is part of the existing landscape character and the landscape impacts during the operational phase will be Minor to negligible adverse. The impact will be no change for adjacent landscape character areas namely; Midleton Town Centre and Undulating Residential Townscape; and Estuarine Harbour-based Industrial and Maritime Landscape.

An assessment of Cork County Development Plan has predicted that there will be no significant landscape or visual effects for any relevant landscape policy and designations in the Plan.

An assessment has been undertaken to determine the magnitude of visual impact of the proposed development during the construction/operational phase on potential views from sensitive visual receptors including residential properties. The predicted significance of visual impact is predicted as Minor to Moderate adverse effect for the residential properties at Rocky Road with a view of traffic. The predicted significance of visual impact is predicted as Negligible to Minor adverse for the residential properties at the N25 with a potential view towards the proposed site. The predicted significance of visual impact is predicted as no change for the residential properties at L92501 at Carrigshane with a potential view towards the proposed site. The predicted significance of visual impact is predicted as no change for the residential properties at L3628 at Whiterock with a potential view towards the proposed site. The significance of visual impact is predicted as no change for the residential properties at Tead Beg with a potential view towards the proposed site. The significance of visual impact is predicted as minor to moderate for the residential properties at Gearagh with a potential view towards the proposed site.

A series of six representative viewpoints have been selected from locations throughout the study area and photographs taken towards the proposals and subjected to specific visual impact assessment and no significant visual impacts predicted due to a combination of screening from topography and vegetation and the presence of existing quarry operations in the views.

On completion of the post remediation activities the predicted landscape and visual effects will be reduced and overall have a small landscape and visual beneficial impact at a local level as the remediated site will be hard to discern from within the wider landscape.

A range of cumulative projects have been assessed with the proposed development and no significant landscape and visual effects predicted due to a combinations of separation distances and intervening topography.

The do-nothing scenario would result in the existing site remaining as a disturbed quarry landscape on the south eastern side of Midleton with no resultant landscape or visual alteration to the existing landscape and visual context of the area.

Within the wider landscape the proposal will continue to blend with the existing agricultural landscape around the site with a beneficial residual landscape character impact. With regards to visual impact on sensitive receptors the beneficial impact on existing views will continue post remediation and the site will remain as a new feature restored site for some viewpoints in very close proximity to the south and southwest but overall the visibility of the site will be limited through time and the proposals will continue to blend within the local visual context.

In summary the broader landscape character area and visual context around the landscape southeast of Midleton and wider East Cork area has the capacity to absorb a development of this scale in landscape and visual terms.

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14 CULTURAL HERITAGE

The assessment commenced with a desktop study of the archaeological, architectural and cultural heritage resource within the study area. This was followed by an inspection of the subject site to assess the existing environment in terms of landscape, existing land use and the potential presence of unrecorded archaeological and architectural heritage sites.

There are no Protected Structures or buildings listed in the National Inventory of Architectural Heritage (NIAH) located within the subject site or in the surrounding study area. The recorded former location of a cashel site (CO076-066----) is located within the quarried area and there is no surviving trace of this archaeological monument. There are no other recorded archaeological sites within the quarry or its close environs while there are a number of examples within the surrounding study area.

There is one recorded prehistoric site located within the study area and this is a *fulacht fiadh* (CO076-064----) located approx. 480m south of the subject site. These are one of the most common archaeological sites in the country and are often interpreted as the remains of prehistoric cooking sites. The majority of excavated examples have been dated to the Bronze Age (c. 2400-500 BC). The example within the study area was discovered and partially excavated in 1982 during archaeological supervision of a pipeline project.

The recorded former location of an archaeological monument (CO076-066----) within the east end of the quarry is classified as a cashel, an early medieval enclosure of drystone construction similar to the more common earthen ringforts. This site is not shown on the historic Ordnance Survey (OS) maps of the area, indicating that may have been levelled in antiquity, and the ground levels at its recorded location have been reduced down into underlying bedrock by the quarrying operation. The only other recorded archaeological site within the study area comprises the remains of a tower house (CO076-051----) located within a farmyard located approx. 170m to the south of the subject site. This is known locally as 'Coppinger's Castle' and was recorded as being in ruins during the early 19th century.

The cartographic sources examined for the study areas included the 1st edition of the 6-inch OS map (surveyed in 1841) and the 25-inch OS map (surveyed in 1897). The subject site is shown as enclosed farmland on both maps with areas of rock outcrops and marginal land also indicated. No potential archaeological features, including the potential cashel site, or built structures are shown within the subject site or its close environs on either of the maps.

The inspection of the subject was undertaken in March 2018 and confirmed that significant ground reduction works have been undertaken within the quarry; including at the recorded location of the potential cashel site (CO076-066----). The ground levels along the immediate margins of the quarried areas were also disturbed and the bedrock surface has been exposed. No unrecorded archaeological or architectural heritage features were noted during the site inspection.

The proposed infilling of the quarried areas will not result in any predicted impacts on known elements of the cultural heritage resource during the operational and post-remediation phases. The proposed scheme will not involve ground reduction works outside the quarried area and it will, therefore, not result in any predicted impacts on any potential sub-surface archaeological features within the subject site and its environs.

The location of the recorded archaeological site within the quarry (Cashel CO076-066----) has been extensively reduced by extensive bedrock extraction works and no traces of the monument or

remnant traces of original ground levels in its vicinity survive. There are no other recorded archaeological or architectural heritage structures located within c.170m of the site boundary. No archaeological mitigation measures are, therefore, required during the operational and post-remediation phases.

Overall, the proposed scheme will result in a neutral residual impact on the cultural heritage resource during the operational and post-remediation phases. No monitoring or reinstatement measures are required in relation to the cultural heritage resource.

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15 INTERACTION OF IMPACTS AND SUMMARY OF MITIGATION

Table 15.1 identifies the environmental topics under which interactions and cumulative impacts could result as identified in the EIAR if no mitigation measures are put in place for any impacts identified. It illustrates that impacts resulting from one aspect of the environment can have a effects on other elements of the environment, thereby resulting in indirect and / or potentially cumulative impacts.

	Population and Human Health	Material Assets	Traffic	Noise and Vibration	Air Quality and Climate	Soils, Geology and Land Use	Water Services, Hydrology, Hydrogeology and Flood Risk	Biodiversity	Landscape and Visual Impact	Cultural Heritage
Population and Human Health			X	X	X		X		X	
Material Assets										
Traffic				X	X					
Noise and Vibration										
Air Quality and Climate										
Soils, Geology and Land Use							X			
Water Services, Hydrology, Hydrogeology and Flood Risk										
Biodiversity									X	
LVIA										
Cultural Heritage										

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