



# Restoration of Bay Lane Quarry

## Environmental Impact Assessment Report Volume I: Non-Technical Summary

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March 2019





# Extended Operation at Hollywood Landfill

## Environmental Impact Assessment Report Volume I: Non-Technical Summary

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# 1 INTRODUCTION

RPS has prepared this non-technical summary of the Environmental Impact Assessment Report (EIAR) prepared for the proposed operations at the disused quarry at Bay Lane, St. Margaret's, County Dublin<sup>1</sup>.

The Environmental Impact Assessment Report has been prepared to accompany an application by GLV Bay Lane Limited for planning permission from Fingal County Council to permit operations in order to fill the Bay Lane Quarry void. It is proposed to restore the land to previous levels following the importation of soil and stone. The stated objective of the proposed development is as follows:

- The phased backfilling of the existing quarry to allow for the full restoration of the lands.

This report serves as a summary of the entire Environmental Impact Assessment Report 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

The site, a former quarry, is located on Bay Lane, St. Margaret's, County Dublin, approximately 1km southwest off Exit 2 on the M2 motorway, approximately 4km NNW of Exit 5 (N2) on the M50 motorway. The site location is shown in Error! Reference source not found.. The site is accessed via the N2-R121 dual carriageway link road and a local road (Bay Lane) which it shares with some commercial and residential properties. The site entrance gate is set back 20m from the road centre line, creating a pull-in area. A stone wall marks the perimeter of this area.

The site area is approximately 13.67ha in total and original ground level lies approximately 59m above Ordnance Datum. The quarry void extends over an area of 8.59 hectares. There is currently no activity on site. There are signs of significant previous rock excavation and crushed stone production evident at the site. The pit floor is generally flat rock with a layer of soil or stone. Within the open pit, small mounds of aggregate still remain, awaiting transport offsite for use.

The north eastern section of the site has not been excavated for quarrying purposes. A volume of material from previous activities, quarrying by-product (excess stone from quarrying) has been stockpiled in this area. The south-eastern perimeter of the site is bounded by road frontage. The north-western, northern and western perimeter of the site is bounded by lands in active agricultural use.

An unoccupied boarded up residential property is located on south east corner of the site - this is in the ownership of GLV Bay Lane Limited, but no development proposal is presented for this property. Current existing infrastructure located within the site compounds include; two portacabins, a weighbridge, an un-bunded metal fuel/oil tank and a settling tank.

Much of the land immediately surrounding the site is undeveloped and is utilised for various agricultural practices, including but not limited to, tillage and dry stock. In addition, a number of

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<sup>1</sup> Address per FCC planning decision 1694 reference F00A/0862 of 20 April 2001

commercial operations are also located within the area including a concrete company (Halton Concrete) is located 200m to the west of the site.

The human environment in the area consists mainly of one-off detached residential properties located along Bay Lane. There are three occupied residential properties identified within 250m of the site's eastern boundary.

The site is zoned for General Employment (GE) 'Provide opportunities for general enterprises and employment' under the Fingal County Council Development Plan 2017 – 2023 while also being subject to the Cherryhound Local Area Plan.

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Figure 1.1: Site Location

## 1.2 CONSULTATION

The consultation process consisted of communicating with both statutory and non-statutory organisations and other competent parties. The primary objective of involving these organisations and parties at an early stage in the EIA process is to aid in the scoping of and the content of the EIAR. A summary of the key issues noted by the responses of substance are set out in **Table 1.1**, along with a note as to how these items are addressed in the EIAR:

**Table 1.1: Summary of Responses from Statutory and Non-Statutory Organisations and other Competent Parties Consulted**

Consultee	Response Received	Key Issues Identified in Response	How Addressed in EIAR
Development Application Unit, Department of Culture, Heritage and the Gaeltacht	Yes	The DCHG responded with observations / recommendations regarding the impacts backfilling has on nature conservation. The response gives recommendations and considerations to the EIAR scoping and Appropriate Assessment guidance for the impact on flora, fauna and habitats present. Construction management plan required.	Addressed in Chapter 8. Construction management plan included as appendix 5.1
Transport Infrastructure Ireland	Yes	TII suggest the developer should have regard, <i>inter alia</i> ; the EIAR should identify the methods/techniques proposed to demonstrate that the developer can proceed complementary to safeguarding the capacity, safety and operational efficiency of that network; consultation with local authority/National Road Design Office; identify haul routes and confirm their capacity to accommodate the proposed load; to TII guidelines including requirements for RSA and RSIA; to guidance, standards and other documents available; TII Environment Guidelines; previous EIS/EIARs imposed by ABP.	Addressed in Chapter 13.
Geological Survey of Ireland	Yes	GSI responded stating <i>inter alia</i> that there is no record of a County Geological Site in the immediate vicinity of the proposed development.	Addressed in Chapter 9.
ESB Networks	Yes	Responded, providing details of the overhead lines onsite.	Safety requirements noted in CMP – appendix to Chapter 5.
HSE	Yes	A response was received from <ul style="list-style-type: none"> <li>the HSE Health Protection Department</li> <li>the HSE Environmental Health Unit, Blanchardstown.</li> </ul> <p>The HSE Environmental Health Officer, Blanchardstown made observations and submissions summarised as:</p> <ul style="list-style-type: none"> <li>Recommended surface water monitoring. Additional storm and runoff impacts should be considered.</li> <li>Adjacent houses may be affected by noise and</li> </ul>	Addressed in Chapter 10.  Addressed in



		<p>dust, a baseline should be established, and monitored.</p> <ul style="list-style-type: none"> <li>Pyrite: consideration must be given to potential pyrite implications of restoration/development.</li> </ul> <p>The HSE Department of Public Health East made observations and submissions summarised as:</p> <p><b>Population profile</b></p> <ul style="list-style-type: none"> <li>The site is situated in an area of higher than average proportion of certain populations population growth.; non-Irish nationalities.; young families; children &lt;10 years and; adults 25-45 years; travellers; persons in the deprived social groups (Mulhuddart).</li> </ul> <p><b>Vulnerable populations</b></p> <ul style="list-style-type: none"> <li>Vulnerable populations proximity identified as:             <ul style="list-style-type: none"> <li>residential housing c. 1km from site.</li> <li>primary schools c. 1.5km from site.</li> <li>crèche about 1.4km NW of site.</li> <li>no nursing homes in the vicinity.</li> </ul> </li> </ul> <p><b>Previous issues</b></p> <ul style="list-style-type: none"> <li>Unclear if pyrite rock has implications for the proposed filling and the future.</li> </ul> <p><b>Health effects during the refilling stage</b></p> <ul style="list-style-type: none"> <li>concern about the noise and dust on houses.</li> <li>The project will increase heavy goods traffic.</li> </ul> <p><b>Water quality issues</b></p> <ul style="list-style-type: none"> <li>Onsite water may risk of contamination of groundwater.</li> </ul> <p><b>Flooding</b></p> <ul style="list-style-type: none"> <li>The potential implications of flooding risk in the area need to be addressed.</li> </ul> <p><b>Risk of a greater Health impact on the north Dublin population</b></p> <ul style="list-style-type: none"> <li>need to safeguard the public from environment related pressures and risks to health and wellbeing.</li> <li>The site is upriver from sites of public health importance.</li> <li>Pollution could pollute and damage the ecosystem necessary for health of north Dublin population.</li> </ul> <p><b>Further development of the site</b></p> <ul style="list-style-type: none"> <li>residential development would lead to a dependence on private car usage.</li> <li>The development of the recovered site for example as native woodland forestry would be compatible with the public health aims.</li> </ul> <p><b>Specific requests/Recommendations</b></p> <ul style="list-style-type: none"> <li>Planning should take account of noise mitigation and operating hours with consideration for nearby residential communities</li> <li>Planning should take account of mitigation of dust production during the refilling stage and potential respiratory health effects of same (not</li> </ul>	<p>Chapters 9, 11 and 12.</p> <p>Addressed in Chapter 9.</p> <p>Addressed in Chapters 9, 11 and 12.</p> <p>Addressed in Chapters 10.</p> <p>Addressed in Chapters 10.</p> <p>Addressed in Chapters 10.</p> <p>Addressed in Chapters 10.</p>
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		<p>merely nuisance issue).</p> <ul style="list-style-type: none"> <li>plans for this site should consider protecting safety of residents and require restriction of routes used by vehicles to minimise disturbance and risk to residents.</li> </ul>	<p>Addressed in Chapters 13.</p>
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## 2 BACKGROUND AND NEED FOR THE DEVELOPMENT

This application seeks permission for the backfill and restoration of a quarry with soil and stone waste with an estimated void fill requirement of c.740,000 m<sup>3</sup> of fill soil and stone material (712,129 m<sup>3</sup> usable void plus 27,918 m<sup>3</sup> soil covering).

**Section 2.2** of this chapter presents the details of the increasing trend in generation of soil and stone inert wastes in the GDA and nationally based on projected construction trends. The growth trends illustrate that the projected increases in generation rates of inert soil and stone from 2018 to 2023 are of the order of 20-40% in the GDA (depending on high or low growth rates employed). These increased generation rates will increase the demand for intake capacity in the region and hence there is a strong demand for suitably licensed soil and stone facilities within the GDA in the medium term.

The analysis of licenced capacity to accept this waste stream illustrates that between 2018 and 2023 the annual intake capacity in the GDA will decrease by circa 28% because of the closure of two sites. This 28% decrease in intake capacity contrasts with the projected 20-40% increase in generation rates outlined above. This data further highlights the need for the facility and the associated capacity to support the predicted increasing trend in soil and stone generation from construction.

The timeline projected to fill the current void is 30 months.

The operations at the site are essential to provide suitably licenced capacity for soil and stone from the projected construction increases proposed in the short term in the GDA.

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### 3 LEGISLATION AND POLICY

This purpose of this section is to consider the proposed development having regard to potential impacts that to the relevant planning policy context concerned. This section therefore considers national, regional and local land use and transport planning and development policy which guides the guides the proposed facility at Bay Lane. The following policy and guidance documents were considered:

- National Planning Framework
- National Development Plan 2018 – 2027
- Regional Planning Guidelines 2010 – 2022
- Regional Spatial and Economic Strategy for the Eastern and Midland Region (2018)
- Transport Strategy for the Greater Dublin Area 2016 - 2035
- Fingal Development Plan 2017 – 2023
- Cherryhound Local Area Plan (December 2012)
- European Waste Framework Directive
- Eastern Region Waste Management Plan 2015 – 2021
- A Resource Opportunity Waste Management Policy in Ireland, 2012
- Construction and Demolition Waste: Soil and Stone Recovery/Disposal Capacity (2016)
- Waste Management Act 1996, No 10 of 1996 (as amended).
- Waste Classification: List of Waste and Determining if Waste is Hazardous or Non-hazardous

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.

## 4 ALTERNATIVES

This chapter sets out the context in which the main reasonable alternatives were considered by GLV Bay Lane Limited for the proposed development and an indication of the main reasons for the final project chosen, considering the effects on the environment. It outlines the main operational alternatives considered by GLV Bay Lane Limited to meet the identified need set out in Chapter 2 of the Environmental Impact Assessment Report. The alternatives considered are listed below:

- Alternative Locations;
- Alternative Layouts;
- Alternative Designs;
- Alternative Processes; and
- Alternative Size and Scale.

### 4.1 LOCATION

The proposed development is for the infilling and restoration of a disused quarry in line with the planning permission and the Environmental Protection Agency licence. As such, there is little scope for assessing alternative locations for the proposed operation. The proposed development has c.740,000m<sup>3</sup> of void space available. Therefore, the preferred location provides the most suitable location for the proposed development as it utilises existing conditions.

### 4.2 SITE LAYOUT

The alternative layout section is to consider how different elements of the proposed development may be arranged on site and what environmental and design implications will arise with these alternative layouts. Alternative layouts would not offer environmental benefit and alternatives are therefore are not proposed.

Development of the site will occur within the landownership boundary and in direct control of GLV Bay Lane Limited. The land area will be sufficient to maintain a buffer zone around the site perimeter.

The site is in a zone for General Employment use (Fingal County Council Development Plan 2017-2023). The proposed development is favourable for the visual impacts of the selected location. The visual impacts of operation below natural ground level are deemed to be insignificant, only during the final stages of operation when works are near the surface level there may be some temporary visual impacts.

Alternative layouts would not offer environmental benefit and alternatives are therefore are not proposed. The internal layout of the proposed development is operationally and environmentally optimal as proposed.

### 4.3 SITE DESIGN

The size of the project (available void space, c.740,000m<sup>3</sup>) is fixed. The scale of the project (filling pace) is dictated by generation rates at the production sites.

Alternative rates of the maximum fill per year have been considered. The net impacts on the immediate area will remain the same in each of the scenarios.

Accordingly, an alternative process is not optimal, and this application seeks to use the proposed duration of 2.5 years. The proposed development has suitable capacity for the acceptance of expected volumes of target wastes projected in Chapter 2 of the EIAR.

### 4.4 SIZE AND SCALE

Consideration was given to the size and scale of the operation, alternative rates of the maximum fill per year were considered in this EIAR. Alternative rates proposed are not optimal. The 532,800 tonnes per annum of inert soil and stone waste rate was selected as the preferred option as it is the most appropriate rate for the void space to be filled in the desired 2.5-year timeframe.

### 4.5 PROCESSES

Consideration was given to additional processes at the site. The retention of Bay Lane Quarry in its current condition is excluded as a viable alternative. The proposed operations with the proposed infrastructure are the preferred option as the proposed development will occur within the proposed Waste Licence boundary with sufficient area available in the ownership and direct control of GLV Bay Lane Limited to allow a buffer zone to be maintained.

The site is zoned General Employment (GE) 'Provide opportunities for general enterprises and employment' under the Fingal County Council Development Plan 2017 – 2023, while also being subject to the Cherryhound Local Area Plan. The infill and restoration of the void will enhance the area, providing long term benefits.

### 4.6 SUMMARY

Having regard to the reasonable alternatives possible in relation to the current proposal the preferred project alternative on which this EIAR is: the development of a soil recovery facility at Bay Lane Quarry.

This scenario will cause some short-term negative issues (i.e. traffic, noise and dust), however, the complete restoration will result in long term positive impacts to health, biodiversity, land and soil, water, air quality, noise, traffic and landscape.

The completion of restorations at Bay Lane Quarry is considered to represent a viable option, in terms of location, availability, existing markets, technical characteristics and manageable environmental impacts.



## 5 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

### 5.1 SITE DESCRIPTION

#### 5.1.1 Site Layout

The former quarry site is being used for the purpose of infilling and restoration of the quarry to previous natural levels. The current site layout is shown in Error! Reference source not found.. The total area in the ownership of GLV Bay Lane Limited is 13.76 ha which is the area covered by this application within the red line boundary.

The site entrance, buildings and other infrastructure are located on the southern boundary of the site along Bay Lane. The site haul road will be constructed to allow vehicles access the active areas. Other features include stockpiles of topsoil and subsoil at the northern boundary.

#### 5.1.2 Plant and Operations

This application seeks permission for restoration of a c.740,000m<sup>3</sup> void that requires backfilling to restore the quarry to natural ground levels. This will fill the quarry with soil and stone waste and then cover with a soil layer.

The following Plant and machinery will be employed on site.

- 1 \* tracked bulldozer with blades to level materials
- 1 \* shovel Loader to transport materials
- 1 \* tractor type vehicle to move water, bowser and sprayer for the suppression of dust.
- 1 \* road sweeper
- 1 \* site vehicle for personnel and light good transport onsite

Plant and machinery on site will be used in accordance with the site's restoration plan. Bulldozers will be used push unloaded material and to level and grade this material and final restoration surfaces. Final cover material will be either stockpiled or to a final restoration surface where it will be levelled and prepared for seeding. Occasionally, the tracked Bulldozer will be employed for landscape contouring purposes at the site.

Given the restricted access into Bay Lane Quarry, it is not necessary to provide a secure compound for plant and equipment at the waste recovery facility. Spare consumables will be stored in a storage container adjacent to the vehicle hardstand area.

The hours of operation proposed by the applicant are from 08:00 to 18:00 hours Monday to Friday and 08:00 to 13:00 hours on Saturdays, with the facility being closed on Sundays and Public/Bank Holidays. No materials will be accepted at outside of these times.

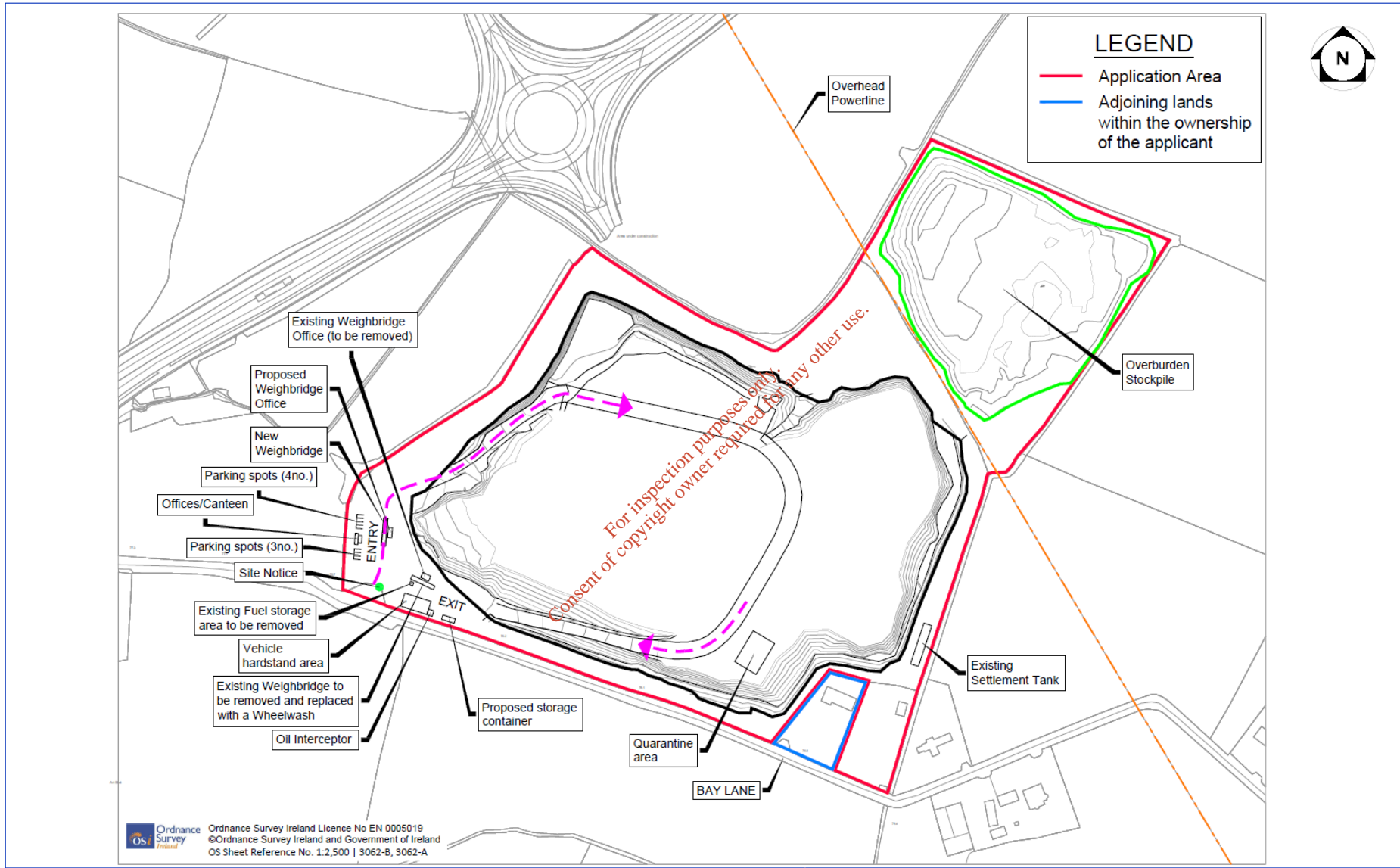


Figure 5.1: Proposed site layout

### 5.1.3 Waste Acceptance Procedure

This proposal is to establish a soil recovery facility at the existing Bay Lane Quarry to facilitate the restoration of the site to former natural levels by importation and recovery of inert clean soil and stone materials in accordance with the restoration plan.

Only clean soil and stones will be accepted at the Bay Lane Soil Recovery Facility during authorised opening hours. The hours of operation proposed by the applicant are from 08:00 to 18:00 hours Monday to Friday and 08:00 to 13:00 hours on Saturdays, with the facility being closed on Sundays and Public/Bank Holidays. No materials will be accepted at outside of these times.

Inert soil and stone waste material under the following European Waste Category (EWC) codes will be accepted for backfilling and restoration activities at the facility:

- 17 05 04 - Soil and Stones other than those mentioned in 17 05 03\*
- 20 02 02 - Soil and Stones

A source of material for the backfilling and restoration of Bay Lane Quarry will be GLV Bay Lane Limited housing development/construction sites, that are in production at the time of operation. In certain circumstances, soil and stone materials will be accepted from other vetted and approved sources.

GLV Bay Lane Limited will implement a rigorous waste acceptance regime to ensure maximum traceability and protection on the environment. Waste acceptance procedures are outlined as below and will be aligned to requirements under the Waste Licence.

Opportunities for identification of unsuitable materials, and subsequent rejection, will be implemented as follows:

1. At pre-approval stage, and the materials will be refused admission onto the site or upon identification of issues at characterization.
2. Upon video inspection at weighbridge (uncovered loads) – materials will be redirected offsite immediately.
3. Upon vehicle tipping. Materials will be reloaded and will be redirected offsite immediately. If reloading cannot occur immediately, the rejected waste will be separated and moved to the Quarantine Area. The recycling manger will be informed immediately. A waste acceptance/rejection procedure will be applied. Non-natural materials in consignments will be manually removed where possible and transferred to the appropriate waste skip for appropriate management.
4. Before recovery stage. Materials will be reloaded and will be redirected offsite immediately. If reloading cannot occur immediately, the rejected waste will be separated and moved to the Quarantine Area. The recycling manger will be informed immediately. A waste acceptance/rejection procedure will be applied.

A flow diagram of the soil and stone waste handling and inspection process is provided in **Section 5.7** of the EIAR.

#### 5.1.4 Waste Intake

The proposed waste licence acceptance limit 532,800 tonnes per annum of inert soil and stone. Note that this volume includes the materials imported for covering purposes.

#### 5.1.5 Employees

There will be four to eight full time employees at the Bay Lane site at various times. A dedicated Facility Manager, and a deputy Facility Manager who has responsibility for operating the weighbridge, and additional office and data management duties including directing and controlling incoming vehicles to waste deposition areas. At least two site operatives will be required. Cleaning staff, subcontractors and drivers, will not be not employed by GLV Bay Lane Limited.

#### 5.1.6 Utilities

A potable water supply for the site office will be provided. Surface water from the quarry surface water system will be used on site for wheel washing and dust suppression.

Sanitary effluent water will be generated from the canteen, toilet and wash facilities within the administration building. All effluent will be collected in a sealed underground pipe network and discharged to a packaged treatment plant with treated effluent percolated to ground. The system will be sized to allow for additional loading. The proposed system will effectively treat effluent from the staff and visitors.

Power will be required for the purposes of administrative activities, canteen, welfare and changing facilities for staff on site. Electricity supply to the administration building and associated infrastructure will be supplied from the grid network. The reinstatement of the existing electricity new connection will be agreed with a utility provider. As part of the development, new power connections will be made from the existing connection to the site facilities. This existing electricity supply will provide lighting and heating to the office and weighbridge. The lighting for the facility will be attached to any plant and machinery, the site office, and quarantine area.

Fuel will be used on site in the form of marked diesel (for site plant) and road diesel (for waste transport vehicles). The fuel will be stored in bunded facilities.

#### 5.1.7 Environmental Management System (EMS)

GLV Bay Lane Limited will develop an Environmental Management System (EMS) for the site. Amongst other elements, the EMS will contain guidance procedures on *Environmental aspects* including fuel and leachate spills.

#### 5.1.8 Environmental Monitoring

The proposed development would operate only under the terms of a Waste Licence from the EPA. GLV Bay Lane Limited will be required to conduct environmental monitoring subject to the limits expressed in the waste licence. These requirements may specify monitoring of ambient dust; surface water (discharge locations and ambient locations); noise.

## 5.2 DO-NOTHING SCENARIO

The 'Do-Nothing' scenario refers to a scenario whereby the facility would remain in its current condition. GLV Bay Lane Limited has no alternate plans for the site if the proposed development were not permitted.

The EIA Regulations require a description of the relevant aspects of the current state of the environment (baseline scenario) as well as and an outline of the likely evolution thereof without the development. In this EIAR this scenario is referred to as the 'Do-Nothing' Scenario and the evolution of the baseline in the absence of the proposed development is addressed in each of the relevant environmental disciplines presented in this EIAR.

## 5.3 PROPOSED DEVELOPMENT

### 5.3.1 Project Description

This application seeks permission for restoration of a c.740,000m<sup>3</sup> void that requires backfilling to restore the quarry to natural ground levels. This will fill the quarry with soil and stone waste and then cover with a soil layer.

Only clean soil and stones will be accepted at the Bay Lane Soil Recovery Facility during authorised opening hours. The hours of operation proposed by the applicant are from 08:00 to 18:00 hours Monday to Friday and 08:00 to 13:00 hours on Saturdays, with the facility being closed on Sundays and Public/Bank Holidays. No materials will be accepted at outside of these times.

Inert soil and stone waste material under the following European Waste Category (EWC) codes will be accepted for backfilling and restoration activities at the facility:

- 17 05 04 - Soil and Stones other than those mentioned in 17 05 03\*
- 20 02 02 - Soil and Stones

The site waste acceptance procedures, environmental monitoring and the general operations will be as described in **Section 5** of the EIAR.

There are several infrastructural proposals sought under this application including a temporary administration office building, weighbridge, hard stand area for site vehicles and car parking and a revised internal road network. These are described within this section.

### 5.3.2 Waste acceptance

Only clean soil and stones will be accepted at the Bay Lane Soil Recovery Facility during authorised opening hours. The hours of operation proposed by the applicant are from 08:00 to 18:00 hours Monday to Friday and 08:00 to 13:00 hours on Saturdays, with the facility being closed on Sundays and Public/Bank Holidays. No materials will be accepted at outside of these times.

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- 20 02 02 - Soil and Stones

A source of material for the backfilling and restoration of Bay Lane Quarry will be GLV Bay Lane Limited housing development/construction sites, that are in production at the time of operation. In certain circumstances, soil and stone materials will be accepted from other vetted and approved sources.

GLV Bay Lane Limited will implement a rigorous waste acceptance regime to ensure maximum traceability and protection on the environment. Waste acceptance procedures are outlined as below and will be aligned to requirements under the Waste Licence.

Opportunities for identification of unsuitable materials, and subsequent rejection, will be implemented as follows:

1. At pre-approval stage, and the materials will be refused admission onto the site or upon identification of issues at characterization.
2. Upon video inspection at weighbridge (uncovered loads) – materials will be redirected offsite immediately.
3. Upon vehicle tipping. Materials will be reloaded and will be redirected offsite immediately. If reloading cannot occur immediately, the rejected waste will be separated and moved to the Quarantine Area. The recycling manger will be informed immediately. A waste acceptance/rejection procedure will be applied. Non-natural materials in consignments will be manually removed where possible and transferred to the appropriate waste skip for appropriate management.
4. Before recovery stage. Materials will be reloaded and will be redirected offsite immediately. If reloading cannot occur immediately, the rejected waste will be separated and moved to the Quarantine Area. The recycling manger will be informed immediately. A waste acceptance/rejection procedure will be applied.

A flow diagram of the soil and stone waste handling and inspection process is provided in **Figure 5.2**.



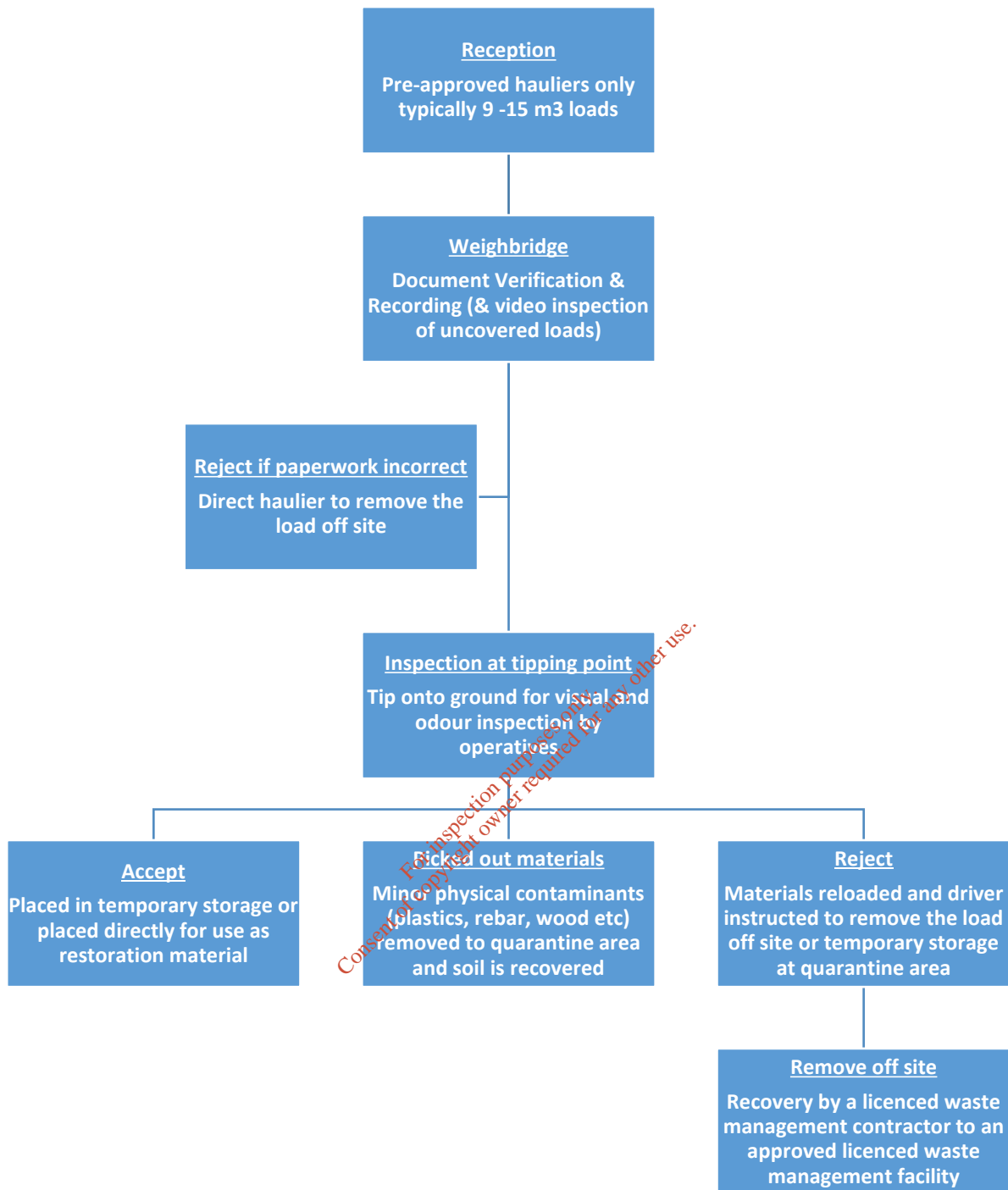


Figure 5.2: Flow diagram of the soil and stone waste handling and inspection process

### 5.3.3 Physical Characteristics

The operational elements of the facility are described within this section. **Drawing 4 - Proposed site plan layout** reproduced as **Figure 5.3.** shows the layout of the proposed development indicating the key site infrastructure developments.

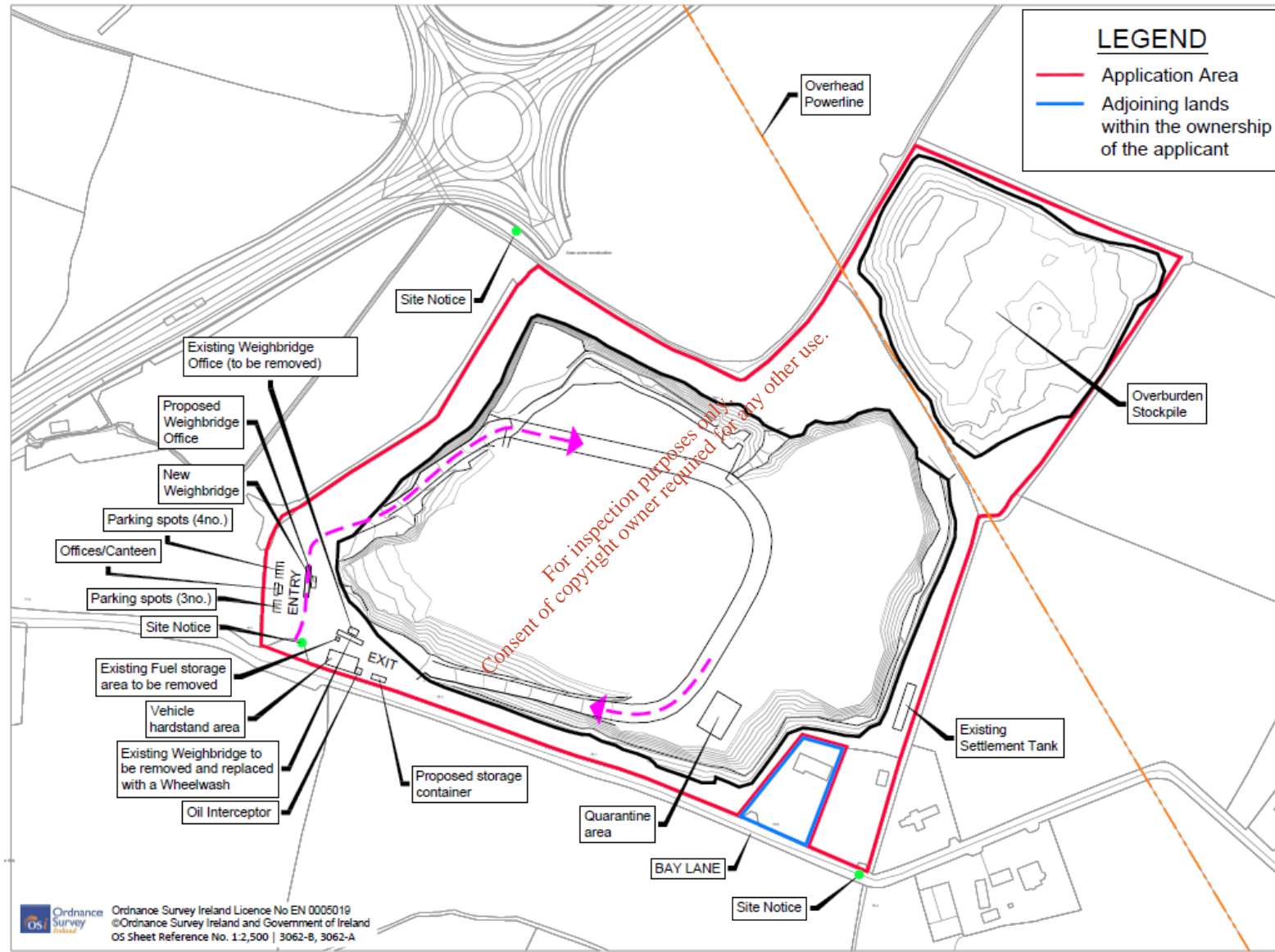


Figure 5.3: Proposed site layout

### 5.3.3.1 Roads and site access

There is one point for vehicular access to the application site – the existing main access. The site entrance has been adequately set-back and splayed to the satisfaction of the Planning Authority.

Access to the site for importation of soil and stone will be provided only to appropriately licenced hauliers and this access will be gained through the existing main entrance onto Bay Lane.

### 5.3.3.2 Onsite traffic

The access road between the main site entrance and proposed weighbridge will be provided with a concrete surface.

After being weighed, incoming traffic will continue eastwards and down an existing unpaved haul road ramp into the quarry void, after which they will travel over a temporary haul road to the backfilling area. Internal hardcore haul roads are existing between the weighbridge and the quarry floor from previous quarrying operations. A new internal site road will be provided, using the existing onsite stockpiled aggregate, linking the bottoms of the access and egress ramps. Site traffic will move on the site haul roads in a one-way 'clockwise-direction' flow. These roads will be maintained at an adequate width for safety.

Traffic direction signs, warning signs, speed limit signs will be established throughout the site.

A concrete apron has been installed at the facility access. Routing exiting traffic over this surface after the wheel wash will help minimise clay and dust from being transported out of the proposed recovery facility onto the public road network. There will be adequate provision of car parking for employees and visitors.

Appropriate measures to ensure safe operations near the overhead power lines will be provided such as height restriction barriers and driver protocols.

### 5.3.3.3 Offices and welfare facilities

Temporary reception and office administration building, with access control, weighbridge and car parking and staff welfare facilities will be located inside the gates to the East (left hand side as entering) adjacent to the entrance, adjacent to the site access road. The buildings will comprise demountable / reusable single-storey flat roof 'portacabin' 4m high structures supplied with water, power and telecoms. The buildings will remain in place for the duration of the site activities.

The buildings will comprise:

- Facility Manager office for administration and management functions
- Canteen / welfare / washing / shower changing and toilet facilities.
- Weighbridge office and Records office

Staff welfare, changing, toilets / handwashing /shower and cooking/canteen facilities will be provided at a separate unit. Sinks and toilet facilities will be plumbed and connected to the wastewater treatment system.

Plans and elevations of the proposed offices and welfare facilities are provided in

- Drawing 9 - Proposed wheel-wash details
- Drawing 10 - Proposed storage container
- Drawing 11 - Proposed managers office & staff welfare facilities
- Drawing 12 - Proposed weighbridge plan & elevations
- Drawing 13 - Proposed weighbridge office plan & elevations.

Also provided in the proposed offices and welfare facilities area will be:

- Lighting for the site reception and office area.
- One car parking per employee plus two visitor places to be provided adjacent to the administration building.
- A revised internal un-paved road network leading from the reception area and serving the deposition areas.

#### 5.3.3.4 Weighbridge

The existing weighbridge will be relocated to the road leading from the entrance and passing in front of the site office. The weighbridge facility will be upgraded in the process of being moved. The provision of a weighbridge will ensure that any heavy goods vehicles serving the site that are overloaded will be identified. Overloaded vehicles will be refused entry to the site.

CCTV cameras mounted at the weighbridge and weighbridge office will be available to inspect and record details of uncovered loads brought to the facility.

#### 5.3.3.5 Wheel-wash

A wheel-wash will be provided for the duration of the development to prevent transport of soil onto the public road Bay Lane. This will be a wheel and undercarriage spray system measuring with a small collector sump and separate freestanding pump and header tank and spray system. Water will be recycled through the system. All HGV and tipper trucks exiting the proposed facility will be required to pass through the wheel wash.

The wheel washes will be self-contained, supported by appropriate servicing, to ensure this water is contained and there is no risk of accidental discharge.

All traffic (except cars) leaving the site will be directed to exit via the wheel wash prior to leaving the site.

### 5.3.3.6 Site Security

The proposed soil recovery facility will be located within the existing site boundaries, which is currently governed by Planning Register Reference Number: F00A/0862 and the site boundaries are aligned to its requirements.

This facility is in an area of low population density. The boundaries of the quarry are enclosed by a combination of drainage ditches, bunds, hedgerows, gate and fencing, which blends into the surrounding landscape. Ongoing monitoring will ensure that site boundaries are maintained in a proper manner, and these include thickening of hedgerows, fencing of the landholding, provision and maintenance of quarry signage, routine cleaning/housekeeping and the removal of unsightly features.

Appropriate warning signs to the public will be provided on the approaches to the site, and the access gate will be kept padlocked shut outside of the normal working hours.

All vehicles importing inert soil and stone to Bay Lane Soil Recovery Facility will be required to use the main entrance and to pass over a weighbridge installed along the access road. CCTV cameras will be installed around the weighbridge and used to monitor and document incoming loads.

Drivers will identify themselves at the weighbridge office before proceeding to the backfilling location. The receiving person at Bay Lane will take a copy of the weigh docket, record the time and date, the nature and origin of the imported soils, the client, licence plate number and waste collection permit details.

### 5.3.3.7 Plant and Machinery

The following Plant and machinery will be employed on site:

- 1 \* tracked bulldozer with blades to level materials
- 1 \* shovel Loader to transport materials
- 1 \* tractor type vehicle to move water bowser and sprayer for the suppression of dust.
- 1 \* road sweeper
- 1 \* site vehicle for personnel and light good transport onsite

Plant and machinery on site will be used in accordance with the site's restoration plan. Bulldozers will be used push unloaded material and to level and grade this material and final restoration surfaces. Final cover material will be either stockpiled or to a final restoration surface where it will be levelled and prepared for seeding. Occasionally, the tracked Bulldozer will be employed for landscape contouring purposes at the site.

Given the restricted access into Bay Lane Quarry, it is not necessary to provide a secure compound for plant and equipment at the waste recovery facility. Spare consumables will be stored in a storage container adjacent to the vehicle hardstand area.

### 5.3.3.8 Plant and machinery hardstand area

No fuel or oil will be stored on site pending use. A double skinned fuel bowser will be mobilised to site as required.

A hard-stand with drainage to oil interceptor will be provided as a designated refuelling area. Mobile plant and equipment will be refuelled at the hardstand parking area. The refuelling area will be underlain by a sealed concrete slab which will fall toward a central drain / gully. All surface water run-off over this slab will be captured by gullies and drains which will carry it to a hydrocarbon interceptor (fitted with silt trap) for treatment prior to discharge.

All oil and lubricant changes and routine servicing of wheeled or tracked plant will be undertaken on the concrete slab at the refuelling area. Waste oils and lubricants will be removed offsite by the mechanic as generated so there will be no routine onsite storage of these materials. Spare consumables will be stored in a secure container adjacent to the vehicle hardstand area.

GLV Bay Lane Limited will put in place an emergency response procedure for hydrocarbon spills and appropriate training of site staff in the implementation of the procedure. This is described in section "Emissions to the environment, monitoring and mitigation" of the Operations Report.

### 5.3.3.9 Services

#### Water

A potable water supply for the site office will be provided. The wheel wash will be supplied by surface water from the quarry surface water system.

Water used for dust suppression will also be sourced from the quarry surface water system. Rainfall occurs daily approximately 50% of the year in Ireland. On days requiring dust suppression water usage is estimated to amount to 10m<sup>3</sup> per day. A use rate of 10m<sup>3</sup> per 110 days amounts to 1100 m<sup>3</sup> per annum.

Apart from short lengths of sewerage pipes running to or from existing infrastructure, no other buried water or waste water service pipes are present at the facility.

#### Sanitary effluent water

Sanitary effluent water will be generated from the canteen, toilet and wash facilities within the administration building. All effluent will be collected in a sealed underground pipe network and discharged to a packaged treatment plant with treated effluent percolated to ground. The system will be sized to allow for additional loading. The proposed system will effectively treat effluent from the staff and visitors.

#### Electricity and lighting

Electricity supply to the administration building and associated infrastructure will be supplied from the grid network. Electricity is serviced to the meter box beside the site entrance. The reinstatement



of the existing electricity new connection will be agreed with a utility provider. As part of the development, new power connections will be made from the existing connection to the site facilities. This existing electricity supply will provide lighting and heating to the office and weighbridge.

The lighting for the facility will be attached to any plant and machinery, the site office, and quarantine area. For the short periods when the operation will be working into darkness (i.e. over winter months), the operators will ensure that adequate lighting is provided to ensure safe operations. As waste recovery activity will be screened from public view by the hedging, light dispersal from site activity will be minimal. All lighting used will be adequately shielded from above and will be directed onto an area below the horizontal.

A series of overhead electricity power line runs along the Bay Lane boundary of the site and within the site. Appropriate measures will be installed to ensure safe operation of vehicles working near the overhead power lines.

### **Telecoms**

All site communication will be by means of conventional GSM telephony. No use of radio transmitters is proposed onsite.

#### **5.3.3.10 Waste Quarantine Area**

A designated waste quarantine area will be set up at the facility for inspection and storage of suspect waste. This quarantine area will hold in appropriate storage, any identified separated non-inert construction and demolition waste (including metal, timber, plastic etc.) pending removal from the facility. There will be 3 dedicated bays with mobile push walls, for temporary storage of arriving loads that have been tipped and are not suitable for recovery but that could not be immediately reloaded. These loads will be covered with tarpaulin to ensure that fall will not meet consignments of suspected contaminated waste. There is no requirement to install drainage infrastructure to provide for the separate collection and storage of potentially contaminated surface water run-off arising at this location.

This waste quarantine area will be located near the base of the "exit ramp" – the ramp that runs inside the perimeter from Bay Lane. The quarantine area will comprise an area of concrete storing appropriate skip containers.

See Drawing 4 - Proposed site plan layout for the proposed location of the waste quarantine area.

#### **5.3.3.11 Sewerage Infrastructure**

Sanitary effluent water will be generated from the canteen, toilet and wash facilities. All effluent will be collected in a sealed underground pipe network and discharged to a packaged wastewater treatment plant. Treated effluent will be percolated to ground at an existing raised treatment / percolation area located near the site entrance.

The system will be appropriately sized and will operate in compliance with appropriate code of practice for a facility, e.g. EPA Code of Practice: Wastewater Treatment Systems for Single Houses.

### 5.3.3.12 Storm Water Management

To cater for the storm water generated by the additional hard stand associated with the paved site entrance road, car parking and associated areas, a dedicated storm water management system is included in the design. This system incorporates the following elements:

- Capture the storm water generated onsite through a gully and pipe network.
- Attenuate the flows using dedicated storm water attenuation to be located adjacent to the car park.
- Treatment of the storm water by means of a combined silt trap and petrol interceptor and sampling chamber which are designed to mitigate the potential for damage.
- Discharge of the treated storm water to the main site storm water management system for subsequent licensed discharge offsite.

The following drawings showing the details of this drainage infrastructure are contained in Volume III of this EIAR.

- Drawing 14A - Drainage A – site location
- Drawing 14B - Drainage B – site layout
- Drawing 14C - Drainage C – site drainage systems layout
- Drawing 14C - Proposed Drainage Layout - Phase 1
- Drawing 14C - Proposed Drainage Layout - Phase 2

Drawing 14C - Proposed Drainage Layout - Phase 3

### 5.3.4 Project Phasing

Phasing will operate in phases as described in following sections, and as outlined in drawings in **Chapter 5** of the EIAR.

Backfilling of the bottom of pit floor will be undertaken in one main lift for each phase. The backfilled materials will be subject to compaction by tracked dozer. The materials placed at the bottom of the quarry will be further compacted by the weight of overlying material.

**Phase 1:** Comprises filling of the area south west of the haul route between the southern and western ramps to final restoration profile. This phase of the development will result in the completion of backfilling of south western corners of the site to final restoration profile, with contoured slopes to the haul road. The final contoured areas will be covered and seeded.

**Phase 2:** Comprises filling of the area north east of the haul route between the southern and western ramps to final restoration profile. The overburden stockpile will also be replaced in the pit area during this phase. This phase of the development will result in the completion of backfilling of north eastern part of the site to final restoration profile, with contoured slopes to the haul road. The final contoured areas will be covered and seeded.

**Phase 3:** Comprises filling of the haul route between the two reception area ramps to final restoration profile. The final contoured areas will be covered and seeded.

**Phase 4:** A covering layer of subsoil and topsoil will be placed and graded across any remaining filled soil and stone which has not been covered and seeded. This topsoil will be planted with grass to promote stability and to minimise soil erosion and dust generation. The final contoured areas will be covered and seeded. Placement of the final covering layers will in all instances align to final restoration profile of the site and will be in accordance with the landscaping restoration scheme submitted with this EIAR, which is aligned to original site contours.

### 5.3.5 Risk of Major Accidents and Disasters

The Regulations require a description of the expected significant adverse effects on the environment of the proposed development deriving from its vulnerability to risks of major accidents and/or disasters which are relevant to the development. The *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* (August 2018) state that there are two key considerations under this requirement, namely:

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

This section identifies the both the potential for the proposed development to cause, and vulnerability to, disasters/accidents. The resultant environmental impacts are identified in the various environmental chapters of this EIAR.

## 5.4 SITE RESTORATION

The purpose of the proposed development is to allow for the backfill of the former quarry to facilitate the full restoration of the site to natural levels. After completion of the backfilling the site will be contoured and landscaped to allow for the site to drain naturally. This restoration will be sympathetic to the surrounding land uses.

As a licensee, GLV Bay Lane Limited will prepare and maintain a plan for the closure, restoration and aftercare of the site or part thereof, including details of the final profile. This closure, restoration and aftercare will provide details for the restoration, demolition/removal of existing structures and the broader procedures for leaving a site in a 'satisfactory state' in advance of a licence surrender.

This application seeks to refine the final contour levels and to this end a final contour layout of the fully restored site is presented in Chapter 16 of the EIAR.

The final restoration levels shown in Drawing 7 - Landscaping Restoration Plan and referenced in Figure 5.4 below.

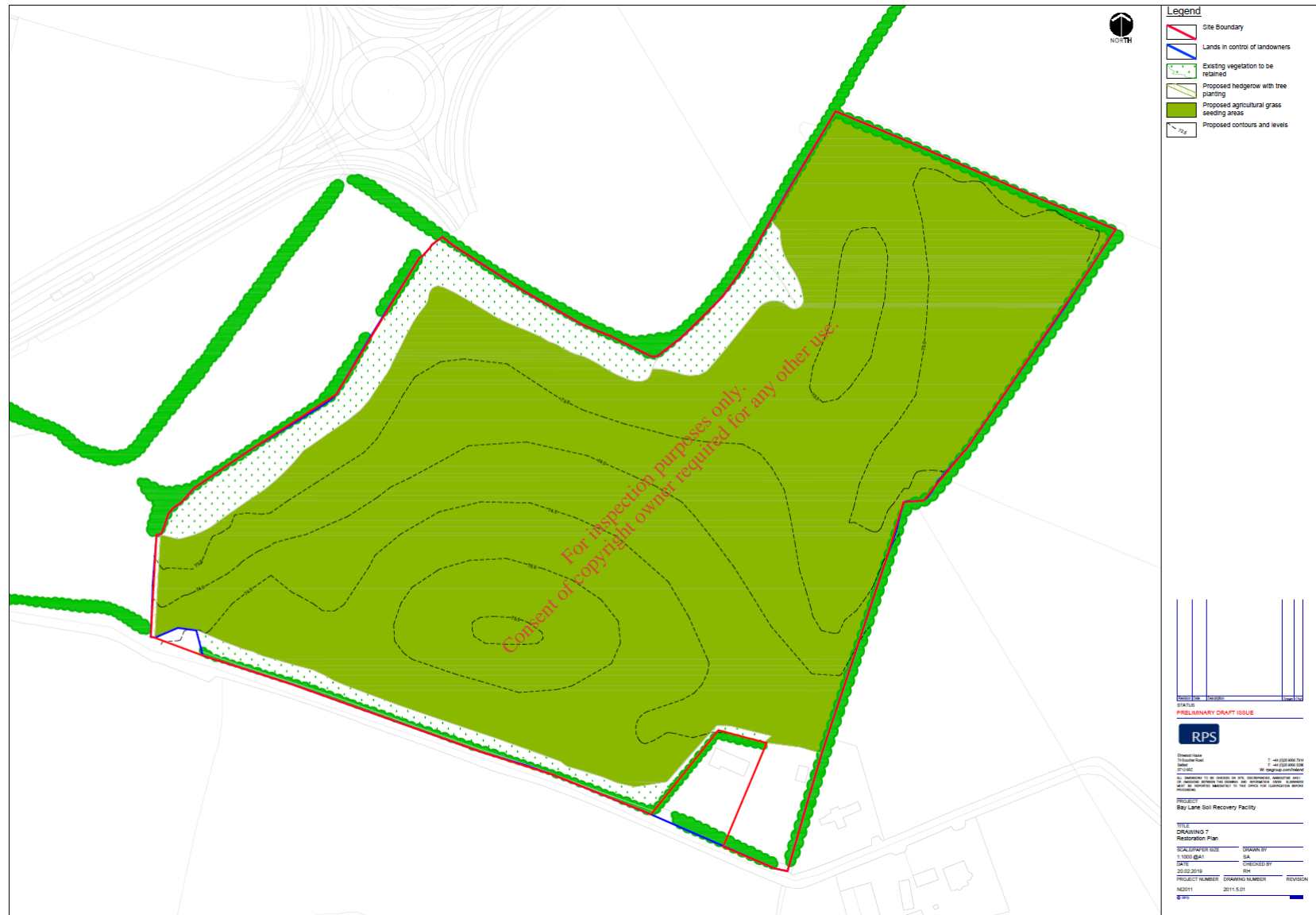


Figure 5.4: Final Restoration Levels

## 5.5 OTHER RELEVANT PROJECTS

A review of other relevant operations in the area has been undertaken to determine the potential for cumulative impacts with the proposed development. These existing operations are outlined in the following sections of this report and the relevant cumulative impact assessed in the various environmental discipline chapters.

The By-Product Decisions and Notifications under Article 27 have been made by other economic operators in the general Bay Lane area are listed in **Table 5.1:** .

**Table 5.1: By-Product Decisions and Notifications made under Article 27 in the Bay Lane Area**

Number	Date	Operator	Substance/Object	Destination
ART27-1151	11/12/2018	ROSSMORE CIVILS LIMITED	Natural uncontaminated Topsoil	Dublin Airport Authority PLC, Old Central Terminal Building, Dublin Airport, Co. Dublin
ART27-1137	23/11/2018	Intel Ireland Limited	Lucan Formation Limestone.	Roadstone Ltd., Huntstown South Quarry, Huntstown, Fingal, Dublin 11.
ART27-1136	23/11/2018	Intel Ireland Limited	Soil and Stone (including Natural Glacial Tills/Boulder Clays and Overburden)	Roadstone Ltd., Huntstown South Quarry, Huntstown, Fingal Dublin 11.
ART27-1133	22/11/2018	Balfour Beatty Group Limited	Road milling - recyclable asphalt	Lagan Asphalt, Rosemount Industrial Park, Ballycoollin Road, Ballycoollin Blanchardstown D11
ART27-0828	03/01/2018	Balheary Clay And Target Shooting Club Company Limited by Guarantee	Soil and stones	Skidoo, Ballyboughal, County Dublin
ART27-0761	19/09/2017	SHANNON VALLEY PLANT HIRE	Clean, uncontaminated Topsoil	Unit 12, Dublin Airport Logistics Park, Dublin.
ART27-0618	20/04/2017	Phoenix Rock Enterprises Limited	Crushed Concrete	Hollywoodrath, Hollystown, Dublin 15
ART27-0256	01/07/2015	Cedar Building Company Limited	Clay	St Patricks Nursing Home Dublin Road Baldoyle Co Dublin [N531958: W061353]

The Article 27 operations would have the potential to generate cumulative traffic, dust, noise and other impacts because of these operations in addition to the proposed development if they were operating alongside the Bay Lane Soil Recovery Facility. These operations have been factored into the analysis undertaken in the relevant chapters of this EIAR.

Further to the backfilling and haulage operations in the area, a review of the Fingal County Council planning website has been undertaken to determine the extent of any committed development in the area with potential for cumulative environmental impact. All applications that bound the site or

are located on the site frontage on Bay Lane and the dual carriageway within the last seven years are listed in **Table 5.2**. The table illustrates that development in the area is small scale residential or agricultural with limited potential for cumulative impact.

**Table 5.2: Development in the Area**

Reference Number	Decision Date	Description
FW17A/0119	May 1, 2018	A logistics (warehouse and distribution) complex building.
FW14A/0132	December 11, 2014	The development will consist of permission for an external sign (10.5m x 5.5m) on the northern end of the eastern elevation of the dry warehouse building which is part of a food distribution facility.
FW14A/0134	December 11, 2014	Retention permission for works completed at Killamonan. The subject of previously granted Planning Permission No's FW13A/0023 and FW14A/0019.
FW13A/0024	April 18, 2013	Permission for a principal access road, associated services and open space provision on a 4.0258 ha site.

On 20 June 2018 Irish Water submitted a direct planning application to An Bord Pleanála in Respect of a Strategic Infrastructure Development (A Proposed Wastewater Treatment Plant, Orbital Sewer, Outfall Pipeline, Sludge Hub Storage Centre and Regional Biosolids Storage Facility) which includes the development of a biosolids storage facility at Newtown, near Kilshane Cross. This facility would operate approximately 2.25km from Bay Lane Soil Recovery Facility.

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## 6 POPULATION

This purpose of this Section is to consider the proposed development having regard to potential impacts that relate to human population. The section considers the proposed land use relative to recent trends in relation to population, employment, economic performance, amenity and the community.

The predicted baseline is defined as the receiving environment prior to the realisation of the operation of the proposed development. For the purpose of this assessment current trends in population and economic growth are expected to continue with additional referencing to the most up to date CSO data.

The potential impacts identified included:

- Short to medium term impacts to temporary population as a result of the employment of workers from outside the wider Dublin area.
- The development is considered to have the potential to have a medium, short term, slight beneficial impact on the economy and employment of the local and wider area.
- The construction (staging) phase is considered to have the potential to have a medium, short term, slight beneficial impact on the economy and employment of the local and wider area. The construction phase will proceed over an approximate 1-month period and will generate construction employment directly on site.
- The Operational Phase (void filling) of the proposed development will result in the creation of a construction site in a new area over phases that will have a potential negative impact on the immediate local environment, businesses and the small number of residents living locally.
- Temporary local impacts during the operational phase (void filling) have the potential to affect the local residential community through increased vehicular traffic and increased noise, dirt and dust generation. These impacts will be limited to the temporary construction period.

The proposed development does not have the potential to result in significant negative impacts on the resident or working population structure during the course of construction or operation. Any perceived negative impacts on the immediate local population will be short term and temporary in nature. A Construction and Traffic Management Plan will be submitted and will include; wetting the road surface; removal of any material spillage; stockpiling; covering incoming vehicles importing loose material; establishing channels of communication; and erection of barriers around generators or high duty compressors. Additional measures will be in place to minimise dust/dirt being transferred from the site and to minimise noise from construction.

No adverse impacts are identified during the operational stage. Therefore, no mitigation measures are required. Due to the fact that the end result will be an infilled quarry as opposed to an operational quarry, the overall amenity value of the subject lands will be enhanced for the local community.



## 7 HUMAN HEALTH

As per the amended EIA Directive and EIA Regulations, this chapter considers the potential impacts upon local communities and their health and provides a proportionate evaluation as to the magnitude and significance of any likely health impact on local communities directly attributable to the proposed development. Where appropriate, the appraisal builds upon and complements the wider environmental mitigation set to protect health, to reduce and remedy any significant adverse effects on local population and their health.

The results of the 2016 Census have been collated to identify the broad health baseline for the State, Dublin and the Fingal area.

The main aspects with the potential to influence local communities and their health, comprises activities that extend beyond the site boundary, namely:

- Potential change in vehicular nature, number and routes;
- Potential fugitive emissions (noise, dirt and dust generation/resuspension); and
- Potential impacts to drinking water supplies.

The slight increase in traffic flows because of the construction of the site infrastructure at the proposed facility is considered negligible compared to the existing traffic and is not predicted to give rise to adverse impacts for the existing residential community in the area.

During the operational (void filling) phase of the development there will be a net change in the traffic volumes in the vicinity as there will be an increase in truck numbers accessing the site.

There will be no change to site access. The existing quarry entrance on Bay Lane, which was previously used when the site was active as a quarry from 2002-2009 years, will remain in place and will be used for entry and exit of the site throughout the operational phase. As a result, there will be no change to existing road alignments, layout and sight lines of the site traffic. A detailed appraisal of the impacts of the proposed development on roads, traffic and transportation aspects are included in **Chapter 13** Traffic and Transportation, of the EIAR.

There is potential for inconvenience to be caused to the existing communities in the area during the operational phase. Potential impacts in respect of traffic and noise etc. are examined further in the respective sections of this EIAR and are not considered to be of a magnitude, duration or timing to impact on health (i.e. sleep, cognitive function, hypertension), and are not considered significant. Equally, nuisance dust will be managed at source, with onsite wheel washing at the new site entrance.

Any potential for ground contamination at the site presents a potential risk to human health through drinking water contamination. However, **Chapter 9** Soils, Geology and Hydrogeology provides analysis that illustrates that there is no hydrogeological pathway between the site and drinking water supplies and that there is no significant impact on human health.

The site set-up and operational phases therefore are not considered to have a significant impact on the health of the community.

## 8 BIODIVERSITY

This chapter considers and assesses the effects of the proposed soil recovery facility on the ecological environment. Potential environmental impacts for the continuation of the current operation and approved infrastructural changes are assessed and mitigation measures are recommended, where appropriate.

The proposed development site is located within the Nanny-Delvin WFD Catchment, adjacent to the Shallon River (IE\_EA\_08W010300), which flows along the northern boundary of the site. The Shallon is a small tributary stream that rises a short distance upstream of the proposed development site. The watercourse enters the Malahide Estuary approximately 13km downstream. It belongs to the WFD monitoring network having been at classed at *Good* WFD status at the reach closest to the Bay Lane quarry site (Ward\_030). With the proposed sediment control plan during construction/staging and operation, any impact to the stream and the downstream designated sites may be mitigated.

The Shallon stream in and around the proposed development is highly modified at this point having been previously remodelled. The new road includes a number of junctions which would support the development of the surrounding lands. The watercourse is which is dry for part of the year, is characterised by shallow water during wetter periods and is heavily laden with silt with little obvious flow. It is also characterised by considerable accumulations of fly-tipped debris alongside the road network.

The study area lies near the southern boundary of the Swords groundwater body (IE\_EA\_G\_011). The Swords groundwater body mostly lies within a locally important aquifer, moderately productive but there are smaller areas of unproductive aquifer. The groundwater flow direction is generally towards the coast or neighbouring surface water bodies. The discharge distances are generally of less than 1km given the fissured nature of the bedrock and its general moderate permeability<sup>2</sup>.

There are thirteen (13) proposed pNHAs and no NHAs located within 15km of the study area.

The bulk of the proposed works are located within habitats of Local (lower) importance (e.g., Spoil and bare ground, Recolonising bare ground and Scrub). Habitats of Local (lower) importance do not require impact assessment as per NRA guidelines (2009b). There are a number of habitats that ordinarily would be classified as being of Local (Higher) importance but owing to the site conditions and project parameters e.g. Hedgerows, the impact assessment has been downgraded to reflect the absence of any hedgerow removal.

### 8.1 MANAGING INVASIVE ALIEN PLANT SPECIES

Any mitigation strategy in relation to invasive plant species will in the first instance be based on the *Guidelines on the Management of Noxious Weeds and Non-native Invasive Plant Species on National Roads* (National Roads Authority, 2010a), but should also consider best practice for individual species that may become established on site. In summary, the following are applicable.

- If presence / establishment confirmed by Ecological Consultant, works including access will need to avoid disturbing the infestation or potentially contaminated soil within at least 7m of the infested area (this is the normal exclusion zone that is cited for Japanese knotweed).

<sup>2</sup> [https://jetstream.gsi.ie/iwdds/delivery/GSI\\_Transfer/Groundwater/GWB/SwordsGWB.pdf](https://jetstream.gsi.ie/iwdds/delivery/GSI_Transfer/Groundwater/GWB/SwordsGWB.pdf)

- The Ecological Consultant or a specialist contractor should draw up an Invasive Species Management Plan (ISMP) for any Third schedule IAPS
- If works cannot be avoided within the exclusion zone the IAPS and contaminated soil will need to be appropriately treated and/or excavated and potentially removed off site or buried on site under licence from the NPWS, this would be detailed in the invasive species management plan.

## 8.2 BADGER MITIGATION

The active badger sett is being retained along the perimeter of the site and there is no requirement to close the sett (permanently or temporarily). A preconstruction survey will be undertaken by the retained ecologist prior to commencement of works to confirm the status of the breeding sett and any potential newly established setts. Thereafter, works will be scheduled to ensure that undue disturbance and interference with the sett does not occur.

The mitigation measures described below follow the recommendations set out in the *Guidelines for the Treatment of Badgers during the Construction of National Road Schemes* (National Roads Authority, 2005). The mitigation measures that apply in relation to the known badger sett within the ZoI are discussed below.

Prior to remediation works commencing within the vicinity of the main sett all site personnel will be given a Toolbox talk where they will be briefed on the presence of the sett and the legal protection that badgers, and their setts, are afforded.

An exclusion zone of 30 metres shall be maintained around the sett in the summer season (extended 50m during the breeding season defined as November to June inclusive). The indicative extent of these buffer zones are shown on **Appendix 8E**. The buffer will be clearly demarcated around the sett, using barrier tape. The purpose of the buffer should be noted as Biodiversity Feature rather than Badger to prevent potential persecution of this protected species.

The summer exclusion zone reduces from 30metres for heavy vehicles to 20m for site vehicles and 10m for pedestrians. Any works within the exclusion zone of the sett will be supervised by a suitably qualified ecologist.

Works within the exclusion zones above should only be carried out during daylight hours so as not to disturb foraging badgers. Night-time working, where required will be restricted as far as possible within 100m of the sett. As badgers are nocturnal, disturbance will be reduced by restricting the amount of night-time working within the vicinity of sett. Night-time, in terms of badger nocturnal activity, is defined as beginning one hour before sunset and lasting to one hour after sunrise.

The use of noisy plant and machinery in the vicinity of badger setts will cease before sunset; If the works involve excavations they will either be covered (with plywood), fenced or have an escape ramp installed overnight to prevent badgers, or other wildlife, from falling into them and becoming trapped;

Temporary Spoil heaps will be sited at a minimum distance of 30m from setts.

Chemicals shall not be used within 20m of a badger sett.

The area closest to the active sett is scheduled to be the last one restored, some of the measures above will become more proscriptive by virtue of proximity to the sett. The ecological consultant will advise on programme of works and supervise as necessary.

During the course of the restoration project, poor management of spoil presents the potential for new sett creation, particularly if disturbance in another part of the site. It is recommended that in conjunction with annual preconstruction badger surveys, that a careful watching brief is maintained for signs of new badger activity in the form of setts. Where a new sett is confirmed, and its status ascertained, the consultant ecologist shall consult with NPWS in respect of potentially applying for a derogation licence as necessary to exclude the sett. This is seasonally dependant operation and would require evidence of alternative sett to naturally move on to. Where no such alternatives may be found, consideration of construction of an artificial sett should be discussed with the NPWS. This is not a favoured mitigation measure and as such there can be no guarantee that a derogation licence to close sett would be issued by NPWS in light of current legal review of the Wildlife Act.

The retained ecologist will ensure that the appointed contractor is complying with the mitigation measures outlined above.

### 8.3 FROG & AMPHIBIAN MITIGATION

The confirmation of frog spawn means that frogs are present on site, although no adults have been recorded and the bulk of the existing habitat on site is considered less than favourable. Smooth newts have not been recorded on two site visits and the habitat conditions are less the favourable to support its' using the small man-made sump pond. Notwithstanding this fact, newts are wholly protected and as a precautionary measure it is recommended that the recommended measures applicable to frog are equally valid.

In terms of mitigation, the removal of the man-made sump pond (**labelled N1, Appendix 8E**) should only be undertaken outside the breeding and hibernating season (when they can bury themselves in the mud) (February to July) in summer months.

Until such time that the sump pond is to be removed, the potential for amphibian occurrence in the areas cannot be ruled out. An annual licence should be sought by the retained ecologist on behalf of the client to enable the removal of frog spawn and /or adults each season to suitable donor sites. The licence should also specify Amphibian translocation as a precautionary measure. The location of the donor site would be agreed in advance with NPWS and would require a suitable pond with suitable supporting vegetation or very slow-moving stream. There is limited potential adjacent to the site with which to guarantee the persistence of the local amphibians, who are known to return to ponds.

As such a newly created donor site is recommended to be constructed on site, to the north of feature N1. It is recommended that a smaller hollow is constructed in an existing topographical hollow alongside the Shallon Stream. As the site is directly beneath a flight path from Dublin Airport, it is recommended that large open water bodies are not proscribed, owing to the potential to encourage birds, which can pose a risk to airplanes. For this reason, the proposed shallow pond/scrape should measure approximately 4 or 5 metres in diameter, be irregularly shaped and should ideally be situated near cover both to discourage usage by larger birds (unlikely at this site) and provide cover from predation should it be used as a spawning site.

The construction of the relatively simple pond should be undertaken at the commencement of the project, so that any issues regarding seeping water and recharge can be sorted out before amphibians return to spawn. The design of the pond should be relatively shallow but incorporate stones ledges for ease of access. It should be seeded with some plants from the original sump pond or similar aquatic substitutes.

Until the newly created pond is successfully constructed, the wet hollow surrounding feature N1 and extending northwards alongside the Overburden towards the Shallon Stream should have newt barrier fencing installed as recommend by the retained ecologist. This fencing which is a relatively inexpensive proprietary product, available through specialist suppliers may be used or a geotextile membrane fence may be employed. Either way, it will ensure (if properly maintained) that Amphibians cannot easily venture beyond the defined range within the works area.

## 8.4 HEDGEHOG MITIGATION

The presence of Hedgehog (and pygmy shrew) was confirmed by a single distinctive dropping. Leaf piles that were carefully searched in December 2018 did not have any adults. As there is no known method for excluding pygmy shrew or hedgehog from nest / hibernation sites and therefore the seasonal clearance of vegetation for breeding birds (as described elsewhere) will be implemented. This means vegetation clearance works will avoided during the period 1 March – 31 August as far as practicable. This mitigation will simultaneously avoid the majority of the main breeding season for most small mammal species (Hayden & Harrington 2001).

In terms of site changes, and potential impacts on hedgehog population, it is recommended that two hedgehog hibernation boxes be installed by the Ecological Consultant. One is recommended for the hedgeline east of the existing settlement tank to overcome previous clearance of scrub during separate SI works. A second box is proposed for the North eastern corner of the site in rank hedgeline alongside the Shallon Stream. This is proposed to disturbance of adjacent hedgeline which is subject to a consented development and for which considerable leaf cover was noted. The final location of the boxes should be notified to the Fingal Biodiversity Officer and the Local NPWS conservation ranger for their records.

## 9 SOILS, GEOLOGY AND HYDROGEOLOGY

The Soil, Geology and Hydrogeology conditions at the site have been determined from online map viewers, published reports, a visual site assessment and the EIS for the initial excavation of Bay Lane Quarry. The previous EIS included a borehole investigation.

The bedrock consists of low-permeability limestone with occasional faulting (crushed zones). There are no karst features (dissolution cavities) recorded in the vicinity of the site. There are a number of bedrock outcrops to the northwest of the site and the quarry itself is a manmade outcrop.

Aggregate from this quarry was used at a building construction site where problems subsequently arose from the presence of reactive pyrite in the under-floor fill material. The bedrock at the site and the aggregate piles at the base of the pit may contain reactive pyrite.

The bedrock is overlain by approximately 1m of gravel (high permeability) which is overlain by approximately 3m of sandy, gravelly clay (low permeability). The soils are glacial till derived from the underlying limestone. The gravel and clay layer is overlain by topsoil is classified as poorly drained, fine, loamy, drift with limestones.

The regional topography is generally flat. The ground levels at the site boundary are between 74mOD and 76mOD (the natural ground level). A stockpile at the northeast of the site rises from the natural ground level to a maximum height of approximately 87mOD. The stockpile is gently sloping towards the east (approximately 1V:15H) and steeply sloping towards the west (approximately 1V:1.7H). An earthworks berm extends around the pit where it is adjacent to the site boundary. The top level of the berm is approximately 76mOD on the north and east sides and approximately 77mOD to 80mOD on the south side. The stockpile and berm are understood to be comprised of this overburden material which was removed during the excavation of the quarry. Inside the berm, the overburden has been removed to expose the bedrock. The pit slopes are near-vertical and extend from the top of rock to approximately 59mOD. There are a number of rubble piles in the base of the pit ranging from 2m to 8m high.

The groundwater levels have been observed to vary between the ground surface level and below the base of the pit (59mOD). The groundwater is typically high and discharges from the bedrock into the overburden. Regionally, the groundwater is likely being recharged from local high points (i.e. small hills). Regional groundwater flow direction may not be consistent and the potential for flow to occur in any direction has been considered. The groundwater is of 'Good' quality and the site is mainly within an area designated as 'Extreme' groundwater vulnerability due to the rock outcrops.

The site straddles two aquifer designations, a 'Locally important Aquifer – Bedrock which is Moderately Productive only in Local Zones' and a 'Poor Aquifer – Bedrock which is Generally Unproductive except for Local Zones'. There are 8 no. groundwater wells within 2km of the site that are in active use. The well depths range from 40m to 70m below ground level.

Consultation with the Geological Survey Ireland determined that there is no envisaged impact on the integrity of County Geological Sites by the proposed developments.

The nearest environmentally designated sites are the Broadmeadow/Swords Estuary SPA approximately 11km to the northeast of the site and the Rye Water Valley/Cartron SAC

approximately 13km to the southwest of the site. The impact on these sites will be negligible as they are sufficiently far removed from the Bay Lane Quarry site that there will be no measurable changes in attributes resulting from the proposed backfilling.

There are historic quarries and sites with aggregate potential within 1km of the site. The proposed works will not impact on the viability of these resources.

The proposed backfilling of the Bay Lane Quarry pit will restore the ground surface to its original, pre-quarrying level. This is a positive impact as it will smooth the site topography and make it more consistent with the surrounding landscape. It will also eliminate geohazards associated with slopes and rock faces.

The proposed backfilling will provide soil cover to the bedrock which will reduce the groundwater vulnerability and the likelihood of future groundwater contamination.

There is the potential for contaminated material to be inadvertently included in the backfill imported to site. This could affect groundwater quality and could migrate off site to affect receptors including groundwater wells, surface water bodies and agricultural land. To reduce the likelihood of importing contaminated backfill, the sources of imported materials will be controlled to confirm that they are inert. A series of Waste Acceptance Criteria (WAC) tests will be carried out. Visual inspection of imported materials will be carried out on-site during unloading. The management of the backfill material will make it unlikely that any contaminated material will be deposited on site. The Magnitude of this Residual Impact is considered to be Imperceptible.

The backfilling of the pit will increase traffic volume at the site which increases the likelihood of hydrocarbon spillage. If left unremediated, this could affect groundwater quality and could migrate off site to affect receptors including groundwater wells, surface water bodies and agricultural land. A site-specific traffic management system will be adopted to implement best-practice measures to reduce the likelihood of a hydrocarbon leak occurring. These include speed limits, vehicle inspections, controlled refuelling and the use of spill kits. The site-specific traffic management system will make spillage of hydrocarbons to ground unlikely. In addition, any spills to ground will be quickly and efficiently contained and remediated. Considering the mitigation measures and the relative impermeability of the bedrock, the Magnitude of this Residual Impact is considered to be Imperceptible.



## 10 WATER

This chapter of the EIAR presents baseline information on the local hydrology and assesses the likely significant effects of the proposed soil recovery facility located in Bay Lane, Co. Dublin on the receiving water environment.

The river that flows along the west and north of the site is the Ward River (part of the Shallow River Network – IE\_EA\_08W010300). The EPA mapping locates the Shallow River within the Broadmeadow river catchment (Broadmeadow\_SC\_010). The flow direction of this Ward River from the site is generally to the north east and flows towards Swords where it discharges into the Broadmeadow River. There is an unnamed stream to the east of the site which is a tributary of the Ward River.

The site area is approximately 13.67ha in total and the regional topography surrounding the site is generally flat. The topographic contours of the site are displayed in **Figure 9.6 in the Soils, Geology and Hydrogeology Section**, the natural ground level at the site boundary range between 74mAOD and 76mAOD. The pit slopes surrounding the quarry open cut that represent the land awaiting backfill are near-vertical and extend from the top of the rock to approximately 59mAOD. A berm extends around the pit within the site boundary, the top of the berm varies around the site between 76mAOD (north and east) and 80mAOD (south).

The proposed backfilling of the existing Bay Lane Quarry pit will restore the ground surface to the pre-quarrying levels, making the site more consistent with the surrounding landscape. The backfilling and restoration will be slightly domed to allow surface flow and compacted to allow for future built development if this were permitted. The final proposed restoration is shown in **Drawing 7 - Landscaping Restoration Plan** and referenced in the Landscape Chapter. Landscaping is discussed in more detail in **Chapter 16** of the EIAR.

Samples (4 No.) were obtained from the standing water within the open pit and also from the unnamed stream (2 No.) to confirm the water quality within the site and potential impact of the discharging effluent on water quality of the adjacent stream. The Drinking Water Regulations were used for reference to parameters not included in the Surface Water Regulations. The results of the comparison indicated that the samples obtained from the standing water within the open pit did not exceed the limits listed in the Surface Water and Drinking Water Regulations. The results also indicated that the samples obtained from the adjacent watercourse did not exceed the limits with the exception of BOD and Total Ammonia. BOD and Total Ammonia exceeded the limits for both Good and High Status for the respective parameters set in the Surface Water Regulations. The testing has indicated that the maximum suspended solids is 11mg/l which is less than 25 mg/l allowed for discharge to streams in Ireland. It is also less than the suspended solids in the stream which was measured at 97mg/l. The water quality monitoring results are included in Appendix 9 of this report.

The characteristics of the proposed development with regard to the water and hydrological environment, relate to construction/staging, operation (void filling) and post-closure activities. Issues related to pollution control are also addressed in **Chapter 9 Soils, Geology & Hydrogeology**. The proposed staging works will comprise new construction of hardstanding area and placement of office and welfare facilities. Potential direct impacts from the operational phase could include runoff from hardstanding areas and accidental discharge associated with the operations.

The design of the proposed development has taken account of the potential impacts on the hydrology environment local to the area, e.g. surface water attenuation. Additional measures to mitigate the potential effects on the surrounding hydrology during the construction/staging and operation stages.

Analysis of upstream and downstream surface waters, surface water discharge points will continue to be undertaken as part of any EPA Waste Licence requirements during operations at the site and into the future. The compliance monitoring and reporting will all serve to monitor any potential impacts.

Overall the impacts of the proposed operations are considered to be of imperceptible significance on the surrounding hydrological environment.

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## 11 AIR QUALITY AND CLIMATE

This section assesses the impacts to air quality and climate associated with the proposed soil recovery activity which comprises the importation of inert soil material to fill existing quarry voids. It should be read in conjunction with the site layout plans and characteristics of the project.

As the site is located within Air Quality Zone A (Dublin Conurbation), baseline air quality has been determined from the data available from the EPA monitoring results for the Zone A network and the Dublin Airport Authority (daa) air quality monitoring network to determine compliance with relevant ambient air legislation.

The site is bounded to the north by the ward river (Shallon) tributary stream, the remaining boundaries are made up of greenfield and agricultural land employed for a mixture of pasture and tillage uses. There are various sensitive receptors (houses, commercial operations) located in the area and these receptors vary in distance from the proposed development. These receptors may experience a change in air quality and the extent of these changes in air quality is identified in this assessment. The nearest sensitive residential receptors to the proposed development are the residential dwellings on Bay Lane.

Dust and increased traffic volumes associated with the subject site is likely to be the main impact source. The potential for dust to be emitted depends on the type of activity being carried out in conjunction with environmental factors including levels of rainfall, wind speeds and wind direction. The potential for impact from dust depends on the distance to potentially sensitive locations and whether the wind can carry the dust to these locations.

A single residential property located immediately to the south east of the boundary of the site at Bay Lane is located within 100 metres of the works and potentially the proposed operations in this area. Another property is located to the south east, circa 130m from the site boundary. Operations related dust from the proposed development the nearest property is likely to result in a 'Short-Term Slight Adverse' impact without additional mitigation measures being in place. Where dust related impacts are anticipated avoidance and mitigation measures will be put in place to reduce the impact level - A dust minimisation plan will be implemented during operation.

Given the limited duration and scale of the operations for the proposed site infrastructure and facilities, the associated traffic volumes are not predicted to exceed the 10% of the current AADT on Bay Lane. As such, the predicted impacts of traffic at this stage of the development on local air quality are not considered significant.

Post restoration, 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. When the activities cease post restoration there will be no potential for negative impact on air quality or climate.

In terms of the risk of major disasters which are relevant to the proposed development, given the location and physical characteristics of the proposed development, the main potential risks of flooding, wind, rain and weather events are reduced.

The proposed development is to restore the void created from quarrying operations, therefore, the proposed development will not have additional significant impacts on the microclimate or local

climate of the area. Rainfall, wind speeds and wind direction will not significantly influence environmental impacts as no odours, gases or harmful leachates will be generated at the proposed development.

If natural extreme weather conditions do occur during operation times, GLV Bay Lane Limited will take the appropriate methods to ensure safety of all people associated with the site. If a major snow event was to occur the site will be shut down and be re-opened when it is safe to do so.

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## 12 NOISE AND VIBRATION

This section assesses the predicted noise and vibration impacts of the proposed soil and stone recovery facility at the Bay Lane Quarry site with reference to key sensitive receptors in proximity to the proposed development.

This chapter assesses the predicted noise and vibration impacts of the proposed soil and stone recovery facility at the Bay Lane Quarry site. A detailed description of the Bay Lane Quarry Restoration works is outlined in Chapter 5.

A desk top study was undertaken to review the existing site layout, Google Earth™ imagery and OSI mapping of the surrounding environment to determine the context of the proposal under consideration and the surrounding environment in which it is located. The desk top study identified the main scope of the baseline noise climate and the location of the closest noise sensitive locations to the proposed operations for the impact assessment.

The main objectives of this assessment were to:

- Present and discuss the existing ground noise environment in the vicinity, by characterising the existing baseline noise environment and a review of available historic noise monitoring data;
- Assess the noise and vibration impacts of the transportation of material as well as deposition of the material at the site as part of the proposed works;
- Recommend mitigation measures, where appropriate, in relation to the proposed operations and residual effects associated with such mitigation measures.

Attention is focused on sensitive receptors, such as residential dwellings adjacent to the transport road, as these would experience the greatest level of impact regarding noise and vibration.

A noise survey was conducted on the 14<sup>th</sup> and 15<sup>th</sup> of February 2019 to meet with requirements. During the survey, 3 attended monitoring locations were monitored simultaneously.

A minimum of 3 sampling periods were carried out for daytime measurements. Noise levels recorded were in the range of 66 to 68dB  $L_{Aeq, 30 \text{ minutes}}$  with an arithmetic average of 67dB  $L_{Aeq}$ . During the daytime, dominant noise source was passing local traffic with some aircraft passing overhead contributing to the noise environment. This is confirmed by analysis of the  $L_{A10}$  statistical noise parameter which had an arithmetic average of 70dB. Background noise levels in the range of 55 to 59dB  $L_{AF90, 30 \text{ minutes}}$ . The arithmetic average of the  $L_{AF90, 30 \text{ minutes}}$  was 56dB, which excludes the contribution from any intermittent noise sources such as road traffic noise and as such is more representative of the noise at this location.

The evening background noise level was measured as 52dB  $L_{A90, 15 \text{ minutes}}$ . Similarly, to the daytime noise measured, the dominant noise source was noted to be continuous local road traffic noise with some passing aircraft overhead.

A minimum of 2 sampling periods were carried out for night-time measurements. During the night-time period it was observed that road traffic noise was the dominant source with some noise from

Pallas Foods associated with truck movements audible in the distance. Measured noise levels were 53 and 54dB  $L_{Aeq, 15 \text{ minutes}}$  with background noise levels measured at 42 and 40dB  $L_{AF90, 15 \text{ minutes}}$ . The arithmetic average of the  $L_{AF90, 15 \text{ minutes}}$  was 41dB.

3 sampling periods were carried out for daytime measurements. Noise levels recorded were 64dB  $L_{Aeq, 30 \text{ minutes}}$ . During the daytime, dominant noise source was distant traffic from the N2-R121 dual carriageway link road with intermittent noise from aircraft passing overhead and local passing traffic along Bay Lane. This is confirmed by analysis of the  $L_{A10}$  statistical noise parameter which had an arithmetic average of 67dB. Background noise levels in the range of 51 to 52dB  $L_{AF90, 30 \text{ minutes}}$ . The arithmetic average of the  $L_{AF90, 30 \text{ minutes}}$  was 51dB, which excludes the contribution from any intermittent noise sources such as road traffic noise and as such is more representative of the noise at this location. There was also some audible faint plant noise from Halton Concrete at this location.

The evening background noise level was measured as 49dB  $L_{A90, 15 \text{ minutes}}$ . Similarly, to the daytime noise measured, the dominant noise source was noted to be continuous distant road traffic noise from the N2-R121 dual carriageway link road.

2 sampling periods were carried out for night-time measurements. During the night-time period it was observed that distant road traffic noise was the dominant source. Measured noise levels were 55 and 45dB  $L_{Aeq, 15 \text{ minutes}}$  respectively with background noise levels measured at 43 and 40dB  $L_{AF90, 15 \text{ minutes}}$ . The arithmetic average of the  $L_{AF90, 15 \text{ minutes}}$  was 42dB.

3 sampling periods were carried out for daytime measurements. Noise levels recorded were in the range of 64 to 66dB  $L_{Aeq, 30 \text{ minutes}}$  with an arithmetic average of 65dB  $L_{Aeq}$ . During the daytime, dominant noise source was distant road traffic noise from the N2-R121 dual carriageway link road and passing local traffic with intermittent aircraft passing overhead contributing to the noise environment. This is confirmed by analysis of the  $L_{A10}$  statistical noise parameter which had an arithmetic average of 67dB. Background noise levels in the range of 46 to 50dB  $L_{AF90, 30 \text{ minutes}}$ . The arithmetic average of the  $L_{AF90, 30 \text{ minutes}}$  was 47dB, which excludes the contribution from any intermittent noise sources such as road traffic noise and as such is more representative of the noise at this location.

The evening background noise level was measured as 44dB  $L_{A90, 15 \text{ minutes}}$ . Similarly, to the daytime noise measured, the dominant noise source was noted to be road traffic noise.

2 sampling periods were carried out for night-time measurements. During the night-time period it was observed that road traffic noise was the dominant source. Measured noise levels were 48 and 45dB  $L_{Aeq, 15 \text{ minutes}}$  with background noise levels measured at 41 and 37dB  $L_{AF90, 15 \text{ minutes}}$ . The arithmetic average of the  $L_{AF90, 15 \text{ minutes}}$  was 39dB.

It was not considered necessary to undertake baseline vibration monitoring as there is no evidence to suggest that existing receptors are currently affected by appreciable environmental vibration.

Various scenarios considered road traffic noise, daily truck movements and onsite noise sources plus a do-nothing scenario.

To operate the site as a soil recovery facility, the site will require a valid waste licence from the EPA. As such, to demonstrate the site remains in compliance, it is recommended that a noise survey is

carried out and reported to the EPA at the frequency specified in the licence and that the site complies with the limits specified in the licence.

It is proposed that the recommended frequency of monitoring is on an annual basis and that any noise emission limit values as specified in the licence are applicable at the nearest noise sensitive locations and not the licence boundary. This monitoring should continue while the licensed activity remains in effect.

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## 13 TRAFFIC AND TRANSPORTATION

This chapter will assess the traffic and transportation aspects of the proposed soil recovery facility to establish the potential impact it could have on the operational capacity of the local road network. It includes a comprehensive description of the transportation characteristics of the receiving environment, a first principle assumption on the expected level of trips associated with the development and an analysis on the impact the trips have on the capacity and operating performance of Bay Lane, the N2-R121 dual carriageway link road and the associated roundabout.

The scope of this TTA is consistent with Transport Infrastructure Ireland's (TII) '*Traffic and Transport Assessment Guidelines*', May 2014. Traffic surveys were undertaken on the N2-R121 link road in October 2018, where two-way traffic flows and speeds were recorded on the N2-R121 dual carriageway link road and Bay Lane. The turning movements at the roundabout junction between the N2-R121 Link Road and Bay Lane (known henceforth as Bay Lane Roundabout) were also recorded. This data will be used when assessing the scale of traffic impact generated by the soil reprofiling works.

The existing access to the quarry is located approximately 260m south-east of the roundabout on the N2-R121 dual carriageway link road. The local road that connects this roundabout to the quarry access is called Bay Lane.

The proposed soil recovery works will comprise the placement of c.740,000 m<sup>3</sup> (712,129 m<sup>3</sup> usable void plus 27,918 m<sup>3</sup> soil covering) of fill soil and stone material to be imported to the site over a 30 month works programme. Based on a volume per truck of 11m<sup>3</sup> and a 30-month work programme it is considered that typically the soil importation works will generate circa 2,160 trucks to the site per month. Based on an average 22 working days per month this equates to an average of circa 98 trucks arriving to the quarry per day (196 truck movements in total).

It is expected that the profile of movements over the 30 months will not be consistent and it is considered there will be short term peak surges within the duration of the works which will be compensated then by times where the truck numbers drop below average. It is unknown for how long any peak profiles would occur, but it could be for six summer months within a year (with no truck movements then for the remaining six months of the year).

For this assessment it is proposed to also undertake a worst-case analysis of the potential peak profiles where it is assumed that double the average amount of trucks will arrive on site. This equates to a potential peak of circa 196 trucks arriving to the quarry per day (392 truck movements in total).

It is envisaged that the soil will be imported via the R121 or from wider locations via the M2/N2. Therefore, the focus of the assessment is on Bay Lane Roundabout and the impact on the N2-R121 Link Road. It is proposed to utilise the existing access to Bay Lane Quarry for the trucks importing soil to enter and exit the quarry.

As the proposed soil reprofiling works are envisaged to take approximately 30 months any impact on the roads will be temporary. To assess the traffic impact of the works a scenario where the works will take 60 months to complete if there is any unforeseen event that delays the work programme (potential shortfall in soil provision) was also included.

Mitigation measures include road signage to provide advanced warning signage of the new access, all warning signage will be in accordance with Chapter 6 of the Department of Transport, Tourism and Sports Traffic Signs Manual and will be complemented by supplementary plates stating, 'Entrance Ahead' and the distances. To streamline and manage the arrival/departure of trucks over a working day along the Bay Lane, a booking and scheduling system will be implemented to avoid the scenario of the development related trucks meeting on the sections of Bay Lane with reduced road width. If planning permission is granted, 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.

No monitoring is proposed as environmental mitigation. During the operation stage, all traffic delivering material to the site is fully logged on site and a record of all waste deliveries maintained as a requirement of the waste licence. With the proposed mitigation measures implemented there are no predicted residual impacts for traffic and transportation.

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## 14 MATERIAL ASSETS

This chapter of the EIAR considers the material assets of human and natural origin within the vicinity of the Bay Lane Quarry which could be impacted because of the proposed change of use to a soil recovery facility (SRF). A detailed description of the characteristics of the project is contained in **Chapter 5**.

The study area for material assets has been defined with reference to the area in which there is potential for direct and indirect impact on natural and human material assets because of the proposed soil recovery facility (SRF). The assessment focused on 1.5km area surrounding the site, which considers the land and roadways south west of the N2 motorway that may be impacted by associated site traffic. Other notable material assets that lie beyond this 1.5km area, such as nearest clustered settlements, have also been considered.

The material assets chapter identifies potential impacts to; land use and property; utilities; roads and traffic; and waste management.

Overall, any impacts of the proposed development on land use and property in the vicinity will be temporary to short-term in duration and not significant.

During the initial site set-up phase of the proposal, there will be a temporary slight effect on the local road network due to associated activity at the site. This temporary slight effect will not be significant. During the operational phase there will be a change to traffic volumes in the area due vehicles entering and exiting the site at peak times. This will result in a short-term slight effect on traffic in the area. This temporary slight effect will not be significant. Potential impacts on traffic and transport infrastructure in the area are considered in detail in **Chapter 13** Traffic and Transportation.

During the initial site set-up phase of the proposal there will be intermittent temporary slight effects to ambient dust levels in proximity of the construction area; however, these effects will not be significant. As biodegradable material will not be accepted at the site, there will be no potential for nuisance such as leachate, landfill gas, odour or vermin at the site. There will be potential for short-term slight effects on air in terms of dust generated during the operational phase; however, these effects will be intermittent and not significant. Dust minimisation measures will be undertaken onsite to mitigate the potential effects of dust and are detailed in **Chapter 9** Soils, Geology and Hydrogeology and **Chapter 11** Air Quality and Climate.

During the initial site set-up phase of the proposal there will potentially be intermittent brief and slight increases to noise levels in proximity of the construction area. These potential increases to noise levels during the operational phase, which are because of vehicle and plant machinery use, will be intermittent, slight and not significant. Potential noise impacts and mitigation measures are detailed in **Chapter 12** Noise and Vibration.

No mitigation measures are considered necessary in respect of utilities or waste during the construction phase and continued operation of the facility. No monitoring or reinstatement measures are recommended for material assets beyond the requirements for monitoring already established in the site's waste licence. There are no predicted residual ongoing impacts on material assets during the construction, operational and post-restoration phases.

## 15 CULTURAL HERITAGE

The cultural heritage chapter provides an archaeological, architectural and cultural heritage background with respect to the proposed development. The objective of the report is to assess the impact of the proposed development on the receiving environment and to propose ameliorative measures to safeguard any monuments, features, finds of antiquity or features of architectural or cultural heritage merit.

Fingal has a rich and well-documented historical and archaeological heritage, the latter stretching back to prehistoric times. This part of north County Dublin has a wide range of recorded archaeological monuments, and recent archaeological excavations have provided evidence for a long chronology of settlement from the prehistoric period through to post-medieval times.

The chapter uses historical maps from the Down Survey Maps (1655) to recent aerial photography (Google Earth, 2018).

There are no RMP/SMR sites recorded within or near the proposed development site. The closest recorded archaeological site is located c. 160m to the west, at the site of the former Bay House, which is marked on the first edition OS map. Bay House may have been constructed on the site of an earlier dwelling illustrated on the mid-17<sup>th</sup> century Down Survey map (RMP No. DU014-089).

The landscape of north County Dublin has a rich and varied heritage of historic buildings ranging from estate houses to more modest vernacular architecture. The area is noted for its tillage and relative prosperity and stability throughout historic times.

The existing quarry is located within an area of high archaeological potential. This has been proven by the archaeological investigations undertaken in its vicinity and in the surrounding area, which have yielded significant evidence for human activity since the Neolithic period and especially during the Bronze Age. While this potential has been negated in the majority of the site, through active quarrying, the north-eastern section of the site appears to have remained intact beneath the stockpiling. This was formerly a green field under pasture and is likely to have been ploughed in the past, as much of the townland is noted as being under crop in the 17<sup>th</sup> century.

Greenfield areas are considered to have an inherent archaeological potential, with agricultural practices tending to obscure surviving subsurface archaeology (e.g. where ploughing activity has removed surface traces of a monument). The presence of streams along the site boundaries, tributaries of the Ward river, is also of interest. Rivers and their environs are a potentially rich source of archaeological material, as both settlement and ritual activity are often associated with rivers. Archaeological sites such as *fulachta fia*, Bronze Age cooking sites, are commonly found close to watercourses.

There is the potential that previously unknown archaeological sites, features or deposits may survive subsurface within the north-eastern part of the site, below the original ground surface which is overlain by stockpile material. This overburden will be removed as part of the proposed development. No development is proposed within this part of the site.

No potential impacts were identified in relation to cultural, industrial or architectural heritage. The proposed site boundary follows that of the existing Bay Lane Quarry lands; the townland boundaries forming the northern and western boundaries to the site will not be affected by the proposed works.

The operational phase of the development will have no impact on the cultural heritage environment of the area, as it is anticipated that any impact to archaeological heritage features would be encountered at the site preparation stage and resolved prior to the operational phase.

All physical archaeological, architectural and cultural heritage impact issues will be resolved at the pre-construction stage of the development and therefore no potential impacts are envisioned at the operation stage of the development. There will be no requirement for monitoring post-construction. No residual impacts were identified in relation to cultural heritage.

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## 16 LANDSCAPE AND VISUAL ASSESSMENT

This chapter of the EIAR presents the assessment of landscape and visual impact for the proposed development and seeks to establish and analyse baseline conditions, assess significant impacts, propose mitigation and assess acceptability.

The proposed development site is located approximately 0.7km south-east of Exit 2 of the M2 on the western, fringes of Dublin. The landscape immediately surrounding the proposed development site is primarily agricultural in nature, though has become eroded and more fragmented in nature by pockets of residential and industrial development, particularly to the south and west of the proposed development site.

During the construction/ operational (void filling) phase of the proposed development the predicted magnitude of landscape resource change will be small, and the significance of landscape impact will be localised, negligible to minor and not significant.

During the restoration phase of the proposed development the predicted magnitude of landscape resource change will be negligible, and the significance of landscape impact will be localised, negligible to minor and long term. Such effects are considered to be not significant as the surrounding landscape contains features which quickly absorb the restoration phase operations.

A total of 4 viewpoints, located within close proximity to the proposed development, have been assessed for both construction/ operational (void filling) phase and restoration phase impacts. None of the assessed viewpoints are predicted to experience significant visual impacts. It is considered that the proposed development will remain as a new feature within localised viewpoints in very close proximity but overall the visibility of the site is limited by existing boundary vegetation.

In summary the broader landscape character area and visual context around the proposed development site has the capacity to absorb a development of this scale in landscape and visual terms.

## 17 INTERACTIONS

**Table 17.1** identifies the interactions and cumulative impacts which could result as identified in the EIAR if no mitigation measures are put in place for any impacts identified. The table illustrates that impacts resulting from one aspect of the environment can have a direct effect on other elements of the environment.

Table 17.1: Interaction of Impacts

	Population	Human Health	Biodiversity	Soil, Geology and Hydrogeology	Water	Air Quality and Climate	Noise and Vibration	Traffic and Transportation	Material Assets	Cultural Heritage	Landscape and Visual Assessment
Population		X						X	X	X	X
Human Health				X	X	X	X	X			
Biodiversity				X	X	X					X
Soil, Geology and Hydrogeology					X						
Water											
Air Quality and Climate								X			
Noise and Vibration								X			
Traffic and Transportation									X		
Material Assets											
Cultural Heritage											
Landscape and Visual Assessment											

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