ENVIRONMENTAL BALANCE IN DESIGN AND CONSTRUCTION

EIS FOR A PROPOSED WASTE SOILS RECOVERY FACILITY AND ECO-PARK AT PRETTY BUSH, KILCOOLE, CO. WICKLOW

VOLUME 1 OF 3 - NON TECHNICAL SUMMARY

AUGUST 2016

Wicklow County Council
Comhairle Contae Chill Mhantáin

FEHILY TIMONEY & COMPANY

EIS FOR A PROPOSED WASTE SOILS RECOVERY FACILITY AND ECO-PARK AT PRETTY BUSH, KILCOOLE, CO. WICKLOW

VOLUME 1 OF 3 – NON TECHNICAL SUMMARY

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Abstract: Fehily Timoney and Company (FTC) was retained by Wicklow County Council to prepare an environmental impact statement (EIS) for the proposed development of a waste soils recovery facility and eco-park at Kilquade, Kilcoole, County Wicklow. The potential impacts on the human environment, air and climate, roads and traffic, noise, ecology, geology, hydrogeology, hydrology and water quality, landscape, archaeology and cultural heritage, and material assets are evaluated. This document comprises the non-technical summary (Volume 1) of the information provided in the main volume (Volume 2) of the Environmental Impact Statement (EIS) which accompanies the planning application to An Bord Pleanála for the proposed development.

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1. INTRODUCTION

Fehily Timoney & Company (FTC) was appointed by Wicklow County Council to prepare the Environmental Impact Statement (EIS) for the development of a waste soils recovery facility and Eco-Park at Pretty Bush, Kilcoole, Co. Wicklow. This EIS will accompany a planning and waste licence application for the proposed development.

It is proposed to utilised the site at Pretty Bush for the deposition of up to 200,000 tonnes of surplus dredge spoil material arising from the flood defence works being carried out on the River Dargle in Bray.

Upon completion of the placement of the surplus dredge spoil material, the site will be developed into an Eco-Park that will provide long term environmental and social benefits and recreational amenity for the local community.

The site location for the proposed development is as shown in Figure 1.1.

1.1 The Applicant – Wicklow County Council

The applicant is Wicklow County Council (WCC) who are the owners of the development site at Pretty Bush, Kilquade, Kilcoole, Co. Wicklow.

1.2 Planning History

A number of previous applications have been made that relate to proposals for development within the proposed site boundary:

015286 In October 2001, Wicklow County Council under took a 'Part 8' process for land development and re-instatement and construction works at the site, which was approved in December 2001 but which did not proceed.

041109 The Electricity Supply Board (ESB) applied for the diversion of a section of the existing Fassaroe – Greystones/Kilcoole 38 Kv line in the townland of Priestnewtown in June 2004, for which permission was granted by Wicklow County Council in August 2004.

041253 Eircom applied to Wicklow County Council for the development of an 89 sq.m single storey telephone exchange and site works, including underground cable ducts/chambers, vehicle access from the Kilquade road, the provision of 2 no. car parking spaces and security railings and gates, in July 2004. Permission was refused on the grounds of sufficiency of rights to carry out the development.

1.3 Requirement for an Environmental Impact Assessment and the Planning Application Process

Directive 2011/92/EEC as amended, on the Assessment of the Effects of Certain Public and Private Projects on the Environment requires that certain developments undertake an environmental impact assessment (EIA) before planning permission can be granted. In this instance, an Environmental Impact Statement (EIS) must accompany a planning application.

Parts 1 and 2 of Schedule 5 of the Planning and Development Regulations 2001 – 2015 sets out certain projects that require an EIS. With respect to waste disposal sites, Part 2 (11) (b) states that:

11. Other projects:

(b) Installations for the disposal of waste with an annual intake greater than 25,000 tonnes not included in Part 1 of this Schedule.

As this application relates to the recovery of waste, through the placement of this material at the site where greater than 25,000 tonnes of material will be accepted over a 12-month period, the identified threshold value is exceeded and an EIS is required to accompany the application.

Section 175 of the Planning and Development Act 2000, as amended, addresses the environmental impact assessment of certain development carried out on behalf of local authorities. Such development is determined by An Bord Pleanála, who assess the potential for impact on the environment, based on the information provided as part of the EIS, as well as information from other sources. The Board may refuse or approve the development, with or without modifications.

Appropriate Assessment (AA) screening has been undertaken, which has determined the requirement for AA. A Natura Impact Statement has been prepared and submitted to accompany the planning application and EIS, in accordance with Section 177AE of the Planning and Development Act 2000, as amended.

1.4 Requirement for a Waste Licence

Waste soils recovery facilities which exceed the thresholds for waste facility permits require EPA waste licences rather than local authority waste facility permits.

The threshold outlined in Class 5 of the Third Schedule of the Waste Management (Facility Permit and Registration) Regulations 2007 (amended in 2008) is as follows:

Class 5: Recovery of excavation or dredge spoil, comprising natural materials of clay, silt, sand, gravel or stone and which comes within the meaning of inert waste, through deposition for the purposes of the improvement or development of land, where the total quantity of waste recovered at the facility is less than 100,000 tonnes.

As up to 200,000 tonnes of riverbed material to be deposited at the development site, the relevant threshold of 100,000 tonnes will be exceeded and a waste licence application is required.

1.5 Requirements for Non-Technical Summary

In accordance with the provisions of the EIA Directive[1] and Article 94 of Schedule 6 to the Planning and Development Regulations 2001, as amended, this report is a summary in non-technical language of the information provided in the EIS.

1.6 Technical Difficulties

There were no technical difficulties encountered during the preparation of this EIS.

1.7 Contributors to EIS

Fehily Timoney and Company (FTC) was responsible for the project management and preparation of most sections of this EIS on behalf of WCC. Specialist input from other contributors, including TKFM Limited (preliminary design), DH Design (landscape and visual assessment) and Dermot Nelis Archaeology (archaeology) was also received.

[1] Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (codification).

1.8 Viewing and purchasing the EIS

The EIS is available to view on request from Wicklow County Council.

Any member of the public can inspect the EIS free of charge or purchase a copy, on payment of a specified fee, during public opening hours for a period of six weeks form the advertised date at the:

- Offices of Wicklow County Council, Greystones Municipal District, Civic Offices, Mill Road, Greystones, Co. Wicklow
- Offices of Wicklow County Council, Bray Municipal District, Civic Offices, Main Street, Bray, Co. Wicklow

Submissions or observations may be made only to An Bord Pleanála (the Board), 64 Marlborough Street, Dublin 1 within 6 weeks of the advertised date relating to:

(i) The implications of the proposed development for proper planning and sustainable development in the area concerned
(ii) The likely effects on the environment of the proposed development
(iii) The likely significant effects of the proposed development on a European site, if carried out

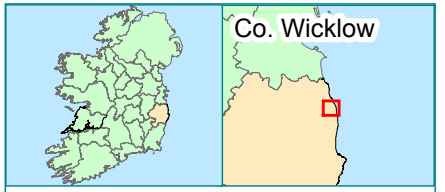
Submissions/observations must be accompanied by a fee of €50.

1.9 Cumulative Assessment

Cumulative assessment assesses the impact of a proposed development in conjunction with other existing or proposed development located nearby or in the vicinity of the development in question, such that the potential combined environmental impacts can be accurately assessed in the event of the proposed development proceeding.

In order to determine whether there are any other projects of scale proposed in the vicinity of the development site, the main volume of the EIS identifies a number of projects proposed for development in the wider vicinity of the Pretty Bush development site. These projects may have the potential to result in a magnified impact in a number of environmental media due to their construction activity nature i.e. noise, air quality (dust) and traffic.

These project have been taken into consideration and reported upon in relevant sections of the EIS.



Legend

Study Boundary

Date 20/01/2016

Name Of Client

Wicklow County Council

Name Of Job

Waste Licence, Planning & EIS for Waste Soils Recovery Facility

Title Of Figure

Site Location Map

Scale Used 1:25,000 @ A4

Figure No. 1.1

Rev A

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2. POLICY, NEED AND ALTERNATIVES & CONSULTATION

2.1 National Planning and Waste Management Policies

Through the recovery of waste soils, the sustainable use of materials and the diversion of waste from landfill, the proposed development will adhere and contribute to the objectives of a number of national planning and waste management policies.

The following national policy documents are considered to be relevant to the proposed development:

- National Spatial Strategy 2002 – 2020 (reviewed in 2010)
- The National Development Plan 2007 – 2013 (revised in 2010 to 2016)
- Waste Management: Changing Our Ways – 1998
- Preventing and Recycling Waste – Delivering Change – A Policy Statement – 2002
- A Resource Opportunity – Waste Management Policy in Ireland – 2012

2.2 Regional Planning and Waste Management Policies

Wicklow County Council, being part of the Eastern & Midlands Regional Assembly, contributed to the development of the Regional Planning Guidelines for the Greater Dublin Area 2010 – 2022, which were made in June 2010. Specific statements and strategic recommendations in relation to waste management outlined in these Guidelines are directly relevant to the proposed development. The recovery of waste material, reduction of waste to landfill, assessment of potential impacts of a development on European sites and consultation with stakeholders relating to a proposed development are all in keeping with policy objectives outlined in the Regional Planning Guidelines for the Greater Dublin Area 2010 – 2022.

The development of the proposed site is in keeping with a number of areas addressed within the Wicklow County Development Plan (WCDP) 2010 – 2016, most notably:

- Section 9.3.6 Tourism & Recreation Themes & Products
- Section 13.2 Solid Waste Management
- Section 15.3.3 Leisure & Recreation
- Section 17.5 Water System
- Section 17.8 Recreation Use of Natural Resources

A number of the policies and objectives included in the above sections are relevant to the proposed development. An updated version of the WCDP, the WCDP 2016 – 2022, is currently being prepared. Many of the policies and objectives included in the draft copy of this Plan do not vary considerably from those included in the WCDP 2010 – 2016 and as such are also considered to be relevant to the proposed development.

The Eastern & Midlands Regional Waste Management Plan 2015 – 2021 was made in April 2015. This Plan specifically addresses recovery capacity requirement for backfilling of inert wastes in Section 16.4.4 with specific policies identified. A number of these policies are relevant in terms of the development proposed at Pretty Bush.

2.3 Local Policy Context

The proposed development is relevant to a number of areas addressed within the Greystones-Delgany & Kilcoole Local Area Plan (LAP) 2013 – 2019. While not located directly within the curtilage of the LAP area, the proposed development directly borders the LAP boundary and so it is considered that the objectives of the LAP are relevant, given its proximity.

2.4 Need for the Development

The need for the proposed development is influenced by two specific factors:

- The requirement for the management of dredge spoil material produced by the River Dargle Flood Defence Scheme Works
- The provision of suitable recreational facilities for the local population in accordance with relevant plan objectives and policies

The dual benefit of the site as an outlet for the appropriate management of the dredge spoil material (in accordance with applied EPA licence conditions) and a subsequent development and use of the site as an Eco-park, satisfies the need for the proposed development and accords with relevant policies relating to both benefits.

2.5 Alternatives Considered

2.5.1 Alternative Locations for Material Management

A number of alternative locations were assessed for the management of the dredge spoil material. Given the planning condition stipulated for the River Dargle Flood Defence Scheme, where material not reused in the flood defence works would be "*removed off-site to suitably licensed disposal facility*", the options in terms of places to manage the material are limited to:

- Existing licenced/permitted waste management sites i.e. landfill or waste soils recovery facilities
- Sites for which a waste soils recovery licence could be secured
- Applications whereby the consideration of a material as a by-product may be applicable

In terms of considering the environmental aspects of any of the alternatives sites and therefore avoiding environmental impacts, it was considered that, as the majority of these sites operate under either waste licence, waste facility permits or certificates of registration, their potential environmental impact has been assessed as part of the licence/permit/certification process and therefore all perform equally in terms of 'environmental performance' for the purpose of assessing alternatives.

The capacity provided at the identified sites is to be considered by a planning authority when assessing future developments in relation to soils backfilling, in accordance with policies of the Eastern-Midlands regional Waste Management Plan 2015 – 2021, but the alternative capacity provided does not offer the benefit of creation of a community Eco-park and therefore may not provide a 'real' alternative to this development proposal.

Therefore, when considering the potential alternative sites, in addition to the site specific requirement to develop an Eco-park, no alternative sites are considered appropriate for the management of material that supplant the proposal to place the dredge spoil material at the Pretty Bush site and develop an Eco-park thereafter.

2.5.2 Alternative Development Options

Upon identification of the preferred development location, options in terms of end use were considered as follows:

- Development of the site as playing fields
- Development as a community Eco-park

Through meeting and liaison with the National Parks and Wildlife Service (NPWS), the option to develop a community Eco-park was identified as the preferred development option. This option was preferred as it is more sympathetic to the existing ecology of the site, in terms of habitats preservation and maintaining the environmental and ecological capital of the site.

The 'do-nothing' scenario would see the following occurring:

- management of the dredge spoil material at another licenced site in accordance with the requirement of the planning permission for the River Dargle Flood Defence Scheme
- the non-utilisation of the Kilquade site and the non-provision of the associated community benefit associated with the Eco-park development
- the maintaining of the existing level of environmental capital associated with the site

2.6 Consultation

A number of statutory and non-governmental bodies were consulted during the preparation of this EIS. A consultation letter, with accompanying scoping report, was also sent to 21 statutory bodies, non-government organisations and public representatives to inform them of the proposal. A number of submissions were received in relation to the proposed development. The issues raised have been addressed, where practicable, in the relevant sections of the main volume of this EIS.

Dedicated consultation meetings were also undertaken with the Environmental Protection Agency (EPA) and the National Parks and Wildlife Service (NPWS) to ascertain their opinions in relation to the proposed development.

In addition, a number of public consultation events and meetings were held to introduce the proposed development to the public, with feedback and comment received and considered. A number of alterations were made to the proposed development as first proposed, including a reduction in input tonnage from 280,000 tonnes to 200,000 tonnes.

3. THE DEVELOPMENT

3.1 Existing Environment

3.1.1 Site Location & Use

The site entrance is located in the townlands of Priestsnewtown and Kilquade, approximately 1 km north of Kilcoole village and 1 km south of Delgany village. Greystones and Bray towns are located approximately 3 km and 8 km north of the site, respectively.

The site covers an area of 5.6 ha and is heavily overgrown with vegetation (mainly gorse, trees and bracken) and is undulating in nature. Currently, a portion of the site is utilised as a mini depot by WCC for road maintenance.

3.1.2 Site Access & Security

The main site entrance is accessed directly from the local L1042 road via an existing agricultural type gate, which is set back approximately 8 metres from the road edge.

A secondary access point to the site is located approximately 175 m east of the main entrance. This comprises an agricultural type gate, directly off the local L1042 road.

The site is not bound by fencing, other than for a short span adjacent to the main site entrance. The site is naturally bound by hedgerows, treelines and vegetation along its entire perimeter.

3.1.3 Mini Depot

A portion of the site, approximately 200 m^2, directly within the main site entrance, currently acts a mini depot for WCC road maintenance activities. This area is a compacted gravel area in which various piles of road dressing material are temporarily stored, prior to use by WCC.

3.1.4 Site Infrastructure

No accommodation, temporary or permanent, is currently located on the site.

The site is not serviced by electricity, water supply or telecommunications. A distribution building owned by Eir, is located directly adjacent to the second access point and some underground cabling associated with this building traverses a small portion of the site at this point.

2 no. ESB power lines traverse the site. A 10kV line runs in a north west – south east direction across the northern portion of the site, while the Fassaroe-Greystones-Kilcoole 38kV line runs in a north-south direction along the eastern flank of the site

The site is not connected to the local sewer main nor is any surfacewater drainage infrastructure installed. Rainfall percolates naturally to ground. No fuels are stored onsite.

3.2 Details of the Proposed Development

The proposed development will comprise:

- Clearance of vegetation from the existing site and chipping/shredding of vegetation prior to movement offsite for appropriate management
- Redevelopment of existing entrance, incorporating boundary treatment
- Placement of up to 200,000 tonnes of dredge spoil at the site
- Installation of temporary (construction period) and longer term surfacewater management infrastructure

- Access improvement works on the L1042 at the site entrance and development of dedicated Council yard
- Importation and placement of topsoil to facilitate Eco-park planting
- Development of Pretty Bush Eco-park features including looped walking tracks, nature trails, waymarkers and information signage

It is estimated that the site clearance works, the dredge spoil placement works and the Pretty Bush Eco-park development will occur over a 12 – 24-month period.

The proposed development layout including Landscaping Plan is shown in Figure 3.1.

3.2.1 Proposed Site Activities

During the Construction Phase, 3 primary types of material will require management at the site:

1. Vegetation cleared from the site
2. Dredge spoil material imported to site for placement
3. Topsoil material imported to site for Eco-park development

The acceptance and placement of dredge spoil at the Pretty Bush site is an activity that warrants a waste soil recovery facility[2] licence from the EPA. An application is being made to the EPA for the required recovery licence by WCC.

During the Construction Phase of the proposed development, it is envisaged that operations will be carried out onsite between:

- 07:00 to 19:00 Monday to Friday
- 07:00 to 13:00 Saturday

Post construction, the Pretty Bush Eco-park will be a recreational amenity available to the general public on a 24 hours, 7 days per week basis.

3.2.2 Construction Phase – Site Clearance Works

In order to facilitate the development of the Pretty Bush Eco-park and to accommodate the placement of the dredge spoil material, it is considered that approximately 80% of the existing vegetation onsite will be removed.

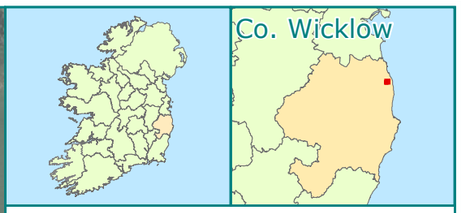
Site clearance will be undertaken in phases, commencing with the material accessible immediately at the main site entrance and working inwards (south to south west) to the site. A mobile shredder shall be used to assist with the site clearance works. A loading shovel will feed the shredder and the shredded vegetation will then be loaded directly onto a tipping truck for removal offsite to an authorised waste management facility for composting

It is envisaged that the site clearance works will be undertaken in a 6 – 8-week period. Environmental controls to be applied relating to environmental and ecological considerations are addressed in the main EIS and summarised in the following sections of this non-technical summary.

3.2.3 Construction Phase – Waste Placement Activities

Following site clearance, the placement of dredge spoil materials from the River Dargle Flood Scheme works will commence. Material shall be transported along an identified haul route to the Kilquade site. A stock pile of material shall be maintained to feed placement activities.

[2] The term 'Soils Recovery Facility' is intended to mean a facility for the recovery, via land reclamation/redevelopment, of uncontaminated natural earth-forming materials such as soil, sub-soils, stone & rock.



Legend

- Study Boundary
- Buffer Zones
- Vegetation/Trees
- Fencing
- Bottom of Bank
- Eco-Walk Track
- 5m Contours
- 1m Contours

Date 16/08/2016

Client Name

Wicklow County Council

Project Title

Waste Licence, Planning & EIS for Waste Soils Recovery Facility

Figure Title

Proposed Layout Including Landscaping Plan

Figure No.	**Rev.**
3.1	A

Scale 1:2,500 @ A3

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A Waste Acceptance Plan has been developed and is included in Volume 3 of this EIS. This plan addresses the following topics:

Waste Identification

'Greenfield soils' will be accepted at the site. Greenfield soil/stone is defined as "*soil and stone from land that has not been previously developed and is not contaminated soil and stone".*

To ensure that the waste arriving on site is 'greenfield soils', a letter of suitability, as to the nature and suitability of the material for placement, shall be provided by a suitable person for the first 5,000 tonnes of material and a further letter of suitability shall be provided for each subsequent 5,000 tonnes of material.

Waste Characterisation

Basic information will be recorded at the Pretty Bush facility on a weekly basis for a randomly selected delivery each of dredge spoil, sub soil and top soil. Amongst the information to be recorded will include the waste source, origin and physical appearance.

Weighing of Dredge Spoil Material

Given the homogeneity of the materials to be accepted at the facility, it is proposed that weighing of loads is carried out on an intermittent basis during the haulage phase to verify weights of material being transported. This will provide sufficient data to the EPA as part of the applicable waste licence information recording.

Waste Acceptance Procedures

A number of procedures will be implemented for the acceptance of dredge spoil and topsoil materials at the Pretty Bush site. Examples include the acceptance of waste at the facility only from contractors assigned by WCC who are holders of valid waste collection permits, the visual inspection of waste before and after unloading, the checking of waste delivery documentation, the use of a waste quarantine area for potential contaminated waste and the removal of rejected waste off site as soon as possible.

Waste Placement

Dredge spoil material stockpiled on site will be loaded into a dumper using a loading shovel, brought to the placement location and tipped, where it will be spread, compacted and graded using an excavator. A layer of topsoil will be applied to the dredge spoil in order to attain finalised contours, improve slope stability and allow for planting activities to be undertaken as part of the Pretty Bush Eco-park development.

Up to 100,000 cu.m of dredge spoil is to be accepted for placement at the site. Laboratory tests indicate an average density of c 2 tonnes/cu.m, for this material, indicating an input tonnage of up to 200,000 tonnes per annum.

3.2.4 Construction Phase – Pretty Bush Eco-Park Development

Improvements to the site entrance and local road will be made during the construction phase – initially during the site clearance and placement phases, the existing gated entrance to the site will be widened and temporary fencing erected in order to facilitate trucks removing cleared material and delivering dredge spoil. Temporary traffic management systems shall be put in place as part of the traffic management plan to manage vehicle ingress and egress during construction.

3.2.5 Construction Phase – Pretty Bush Eco-Park Development

The Pretty Bush Eco-park development phase will comprise:

- Planting of the site in accordance with the Landscaping Plan
- Development of the site entrance, parking area and associated drainage
- Installation of various walkways throughout the Eco-park
- Installation of way markers and information signs

Landscaping Plan

It is proposed to plant 7 oak and 27 hawthorn and mountain ash of varying standard classification, as appropriate.
It is also proposed to plant 30m of native hedgerow. The proposed hedgerows will be planted as a double staggered row of plant (6 plants per linear metre). 3 metre planting mix areas will be planted with a variety of species – one area with mixture of gorse, elder, guelder rose; one with a mixture of shrubby willow, elder and hazel and blackthorn and one of pure Irish native wildflower.

Site Entrance

Towards the end of the construction phase, as the Eco-park is being developed, a permanent entrance configuration shall be created to facilitate the future use of the site as an Eco-park, with permanent boundary treatment along the local roadside created.

The entrance shall facilitate access of small Wicklow County Council light goods vehicles (LGVs) that will access an open area of c 200 m2, directly south of the entrance. This open area shall be gravel surfaced and used for primarily for ad-hoc Council activities.

It is not proposed to provide dedicated car parking for the Pretty Bush Eco-park, rather it is envisaged that the majority of attendees to the site will be walkers utilising the existing footpaths to enter the site.

Walkways, Way Markers and Information signs

Footpaths/walkways of the Eco-park shall be developed, which will display permeable properties so as not to increase surfacewater run-off from the site. Up to1.3 km of walkways will be provided which will meander through the Eco-park. A variety of path surfacing will be considered during the detailed design process.

3.2.6 Post Construction Phase – Pretty Bush Eco-Park Development

The purpose of the Pretty Bush Eco-park is to provide an outlet for recreation and amenity, and to act as an ‘ecological hub’ for plants and wildlife, providing the community an opportunity to interact with the environment.

The Eco-park shall be accessible to members of the public on a 24 hours, 7 days per basis. Maintenance shall be undertaken at intermittent intervals – in order to maintain as close a similarity to the existing Pretty Bush site, the Eco-park shall be allowed to develop in ‘wild’ status, with maintenance being limited to access points and walkway areas, to ensure paths are correctly maintained and do not become overgrown.

It is not expected that regular grass cutting or other landscaping shall be undertaken, save for that required in the initial years to ensure that the species identified in the Landscaping Plan establish themselves and develop appropriately.

3.2.7 Surfacewater Management during Construction & Post Construction

Surfacewater management proposals are presented in detail in the main EIS and centre on the installation of drainage ditches that lead to a stilling pond, with the installation of silt fencing during construction to protect potential silt discharge to streams onsite.

3.2.8 ESB Powerlines

A 10 kV ESB line and 38 kV ESB line traverse the site and a number of pylons are located within the site boundary. The applicant will liaise with ESB Networks in relation to any specific requirement regarding access, health and safety, etc. during the construction and post construction phases.

3.2.9 Proposed Site Infrastructure

Construction Phase Infrastructure

The existing main entrance will be widened during the construction phase to facilitate delivery vehicle movements.

A portacabin structure which will include a site office, canteen and welfare facility, and a shipping container structure for storage will be installed in a temporary site compound on site.

An operators hut will be located adjacent to the entrance. Temporary fencing will also be installed as a boundary for the site compound.

The existing hardstanding surface of the maintenance depot will be maintained for the site compound. Parking provision for construction operative's vehicles will be provided within the site compound.

A dry wheel clean system will be deployed to ensure cleaning of vehicles prior to leaving site. A mobile road sweeper will also be on constant operation at the site during the Construction Phase to ensure that there is no impact form debris on the L1042 local road.

A 1000L fuel storage tank shall be installed on site to provide fuel for site clearance hand tools. This tank shall be fully bunded to contain any spillages. Refuelling of site vehicles shall be undertaken at an identified location within the site compound. The refuelling area shall also be protected by bunding.

Site portacabin/mobile welfare units will have self-contained, bunded tanks for the capture of wastewaters from the site welfare facilities. These tanks shall be emptied on a regular basis under contract with an approved waste management contractor. Chemical toilets, if required, will be provided within the site compound for staff use which will be regularly emptied under contract.

For the duration of the construction works, a temporary electrical connection to the site shall be provided through consultation with the ESB, to provide electrical power to the site offices.

Post Construction Phase Infrastructure

Access to the Pretty Bush Eco-park post construction shall primarily be via the upgraded site entrance, which incorporates a pedestrian entrance. Vehicular entrance shall be restricted primarily to Wicklow County Council vehicles entering the dedicated Council yard area at the entrance and shall be closed to the public.

There will be no requirement for or provision of foulwater management for the Pretty Bush Eco-park development post construction.

A number of lamp stands shall be provided at the entrance to the Pretty Bush Eco-park and a permanent electrical connection to service these shall be provided in consultation with the ESB. To preserve that natural standing of the Eco-park, no lighting is proposed to be installed within the Eco-park.

3.2.10 Environmental Controls in accordance with Best Practice

WCC, as developer of the facility, will require the appointed Contractor to prepare a Construction Environmental Management Plan (CEMP) to address the potential environmental impacts associated with the proposed development during the construction phase.

This plan will include, as a minimum, the means by which the Contractor will address the control of potential emissions to air, ground and/or surface waters. In addition, the Contractor will identify the means by which potential issues in relation to noise and traffic will be managed during the construction phase.

In addition, an application for a waste soils recovery licence is being made in relation to this development to the Environmental Protection agency (EPA).

This licence will authorise the acceptance of dredge spoil and topsoil materials at the facility and thus the requirements of this licence shall apply from the first acceptance of dredge spoil and/or topsoil material at the site.

4. SUMMARY OF THE EXISTING ENVIRONMENT

4.1 Human Environment

4.1.1 Population and Settlements

The site is located in the townland of Priestsnewtown, approximately 1 km north of Kilcoole Village and 1 km south of Delgany village. The site is located within the Kilcoole Electoral District. The 2011 population in the Kilcoole Electoral District was 9,834, which was an increase of 44% since 2006. The nearest major residential zones are Greystones and Bray, located approximately 3 km and 8 km north of the site, respectively.

The nearest hospitals to the site are St Columcille's Hospital and the Beacon Hospital, located approximately 15 km and 20 km to the north of the site. 4 no. schools are located within 3 km of the site; Kilcoole Primary School (c. 1 km to the north), Colaiste Chraobh Abhann (c. 2 km to the north), St. Catherine's Special School (c. 3 km to the south) and St. Laurence's National School (c. 3 km to the north).

Druid's Glen Resort, the Trident Holiday Homes and 5 no. golf courses are located within 3 km of the site.

4.1.2 Land Use

The site occupies an area of c. 5.6 ha and stands out as an area of scrubland. The north-eastern corner of the site (by the main entrance) is presently used by WCC as a min depot for road maintenance. 2 no. small streams traverse the site – one that runs along the eastern boundary of the site and one that crosses the site in a northwest-southeast direction.

4.1.3 Local Employment and Economic Activity

Information from the 2011 Census indicated that commerce & trade and professional services are the predominant industry types providing employment to the population of the study area. This suggests that employment is mainly provided beyond the study area, with the local population required to travel to local economic centres such as Dublin city and suburbs for employment.

It is expected that the proposed development will provide work for 15-20 persons during the construction phase which will contribute to short-term employment in the locality and the overall economy of the local area for this period.

4.1.4 Transport Network

The site entrance is approximately 1 km south of Delgany and 1 km north of Kilcoole on the L1042 local Kilquade Road, approximately 100 metres off the R761 Regional Road. The R761 joins a roundabout junction approximately 200 m north of the L1042/R761 junction, which is joined from the east-west by the dual carriageway R774. The R774 connects to the N11, c. 1.6km to the west of the site. The N11 connects the area to Dublin and Wexford.

Public transport activities also serve the area well. Kilcoole and Greystones are served by the South Eastern Commuter Rail Service, Dublin to Rosslare Europort Services, a public bus service and Aircoach to Dublin Airport. Greystones is also serviced by the DART and a large Park & Ride facility.

4.1.5 Utilities

Drinking water for most of the areas surrounding the site comes from either the Drummin Reservor, the Priestnewtown Reservoir or the Vartry Waterworks in Roundwood. Areas of topographical restrictions are fed by a connection to the Dublin City trunk main while a small proportion of households in the area receive water from wells.

Most wastewater from the Greystones, Delgany and Kilcoole areas is treated at the Greystones waste water treatment plant (WWTP). The Kindlestown and Blackberrylane areas of Delgany are served by private single on-site effluent disposal systems. Another WWTP is located off Sea Road, Kilcoole and services the north and middle of Kilcoole Village.

A 220 kV overhead powerline runs within the proposed development site's eastern boundary and terminates at a terminus pylon located approximate 75 m from the main entrance gate. From here the line runs underground in a northerly direction towards Kilcoole. A 38 kV overhead powerline also runs across the site to its north western corner where it terminates at a terminus pylon. From here it runs underground in a westerly direction.

4.1.6 Recreation, Amenity and Tourism

No recreational activities are carried out at the proposed development site location given that it is currently overgrown scrubland and with the only readily accessible area being a WCC mini depot on the sites north eastern corner.

Recreational options within the Electoral Districts surrounding the site include walking and cycling; the Delany heritage trail, Kindlestown Woodland trail and Glen of the Downes walking trail are all nearby. Various team sports fields are also located within the Charlesland Sports and Recreation Park which is located 650 m east of the site.

5 no. golf courses are located within 3 km of the proposed development. The Glenroe Open Farm is located 1 km northeast of the site, while the Greystones marina, harbour cliff walk and blue flag beach are located 2 km east of the site.

Tourism resources surrounding the site include many of the above mentioned recreational options. Substantial tourism resources are available around the site and include golf, eco-tourism, agri-tourism and historical heritage.

4.2 Air Quality and Climate

4.2.1 Climate

The climatic conditions for the wider geographical area have been derived from historical meteorological measurements compiled by Met Éireann at the Casement Aerodrome synoptic station (94 mOD) which is approximately 35 km north-west of the site.

Data indicates that the mean air temperature is approximately 9.57°C, the mean wind speed is 12.8 knots, the prevailing wind direction is south westerly and the mean monthly rainfall total is 63.76 mm.

4.2.2 Air

EU Directives and Irish legislation set out air quality standards for a wide variety of pollutants. There are four air quality zones defined for Ireland in the Air Quality Standards Regulations 2011. The site for the proposed development is located in Zone C where air quality is good based on the air quality limits set by S.I. No. 180 of 2011 – Air Quality Standards Regulations 2011.

4.3 Roads, Traffic and Transportation

4.3.1 Existing Road Network

The L1042 is a local road that runs past the site from the R761 at its eastern end towards Kilquade. The R761 is a regional road that runs from Bray to Rathnew, County Wicklow. The R761 passes to the east of the subject site as it runs from Delgany to Kilcoole.

The R774 is a regional road that connects the town of Greystones to the N11 at Junction 11. This junction is located approximately 2.7 km (by road) from the site. The N11 is a national primary road running from Dublin to Wexford.

4.3.2 Existing Site Entrances

The existing site has 2 no. gated accesses both off the L1042 local road. The main entrance gate is currently used to access a mini depot operated by WCC. A second existing but rarely utilised site entrance is also located off the L1042 approximately 200 m west of the main entrance.

4.4 Noise and Vibration

A baseline noise assessment was carried out for the proposed development on the 1st October 2015. The monitoring was undertaken at four noise sensitive locations in the environs of the site. The general background noise sources were traffic (L1042, R761 roads and N11), wood cutting and animal and domestic noises (dog barking, birds and people).

4.5 Flora and Fauna

4.5.1 Designated Nature Conservation Sites

Sites of International Importance

There are 5 no. Candidate Special Areas of Conservation (cSACs) and 2 no. Special Protection Areas (SPAs) within 10 km of the proposed development. No Special Areas of Conservation (SACs) are located within 10 km of the proposed development.

Sites of National Importance

There are 10 no. Proposed Natural Heritage Areas (pNHA) within 10 km of the proposed development. No Natural Heritage Areas (NHAs) are located within 10 km of the proposed development.

4.5.2 Rare or Protected Flora

No rare or protected species were recorded within the proposed development site during the surveys carried out.

4.5.3 Existing Habitats

Scrub (WS1) is the most dominant habitat within the site. Other habitats recorded within the site include dense bracken (HD1), grassy verges (GS2), riparian woodland (WN5) and treelines (WL2).

4.5.4 Terrestrial Mammals

A family of badgers is known to use the site currently. 1 no. main sett and 5 no. sub setts have been recorded within the study area.

It is considered likely that hedgehog and Irish stoat use the site, with otter likely utilising the Kilcoole Stream, while it is considered possible also that pine marten and pygmy shrew use the site.
Red fox and European rabbit droppings have also been recorded within the site, while accounts from a local landowner indicate that grey squirrel, an invasive species, have also been observed within the site.

4.5.5 Bats

Bats were recorded during a bat survey conducted on the 29th of September 2015. The most common species recorded over the course of the survey was common pipistrelle (120 calls). Soprano pipistrelle was the second most common species recorded (11 calls).

4.5.6 Avifauna

A desktop study and ecological surveys which took place in September and October 2015 identified a number of bird species within the 2 km grid square encompassing the proposed site. These included species that are of global conservation concern, species that have an unfavourable conservation status and are of European conservation concern, and species that have a favourable conservation status.

Yellowhammer is the only red listed species recorded within the 2 km grid square encompassing the site. This species is red listed as it has undergone a high population decline. The species was not recorded during the surveys carried out at the site.

6 no. species (kestrel, linnet, mistle thrush, sparrowhawk, stonechat, starling) that have an unfavourable conservation status were recorded within the 2 km grid square encompassing the site from the desk study carried out, while 4 no. such species (goldcrest, robin, stonechat, starling) were recorded in the same area from the surveys carried out.

A large number of species that have a favourable conservation status were also recorded from both the desktop study and the surveys carried out.

4.5.7 Aquatic Fauna

The small streams within the site are deemed to be mainly ephemeral in nature, with a low flow and overgrown with vegetation. They do not offer suitable habitat for fish species. The size and degree of modifications along sections of the Kilcoole stream would also indicate that the fish are unlikely to use this stream.

The streams within the site and the Kilcoole Stream do not lie within the range or distribution of white-clawed crayfish in Ireland. The poor to sub-optimal larval habitats for lampreys in the watercourses potentially affected by the proposed development indicate that it is unlikely that lampreys would be adversely affected.

There are no records of European eels within the Kilcoole stream. However, there are records of the species within two other watercourses that drain into Kilcoole Marsh. Due to the location of the species within the greater catchment with connectivity to Kilcoole Marsh there is the potential for the species to occupy at least the lower reaches of the Kilcoole stream.

4.5.8 Other Invertebrates

Other invertebrate fauna recorded within the greater area surrounding the proposed development site include species of butterfly, ladybird, damselfly, dragonfly and bumble bee.

4.6 Soils, Geology and Hydrogeology

The bedrock beneath the site comprises sandstones and siltstones. The subsoils comprise predominantly glacial till derived from the underlying sandstone in the area. The bedrock is close to the surface and exposed in some parts of the site. There are no major faults or folds in the immediate area surrounding the site.

A Poor Aquifer underlies the site. 4 no. groundwater wells are located within 1 km of the site boundary. The overburden deposits of glacial till are generally of moderate permeability, with the assessed groundwater vulnerability for the site being classified as high to extreme.

4.7 Surfacewater and Drainage

There are two ephemeral streams within the site that join immediately to the south of the site and drain into the Kilcoole Stream.

The full area of the site drains into the Kilcoole Stream downstream of the site and an area of 7.57km^2 upstream also drains into this waterbody. The Kilcoole Stream rises at an elevation of 120 m OD in the town of Kilpedder to the west of the site. It flows in a south-easterly direction draining into Kilcoole Marsh and enters the ocean at St. Georges Channel to the east of Kilcoole. There is no history of flooding reported at the proposed development site at Kilquade.

Baseline water quality monitoring of the stream which drains the site and runs along its eastern boundary was carried out in September 2015 and indicated a good quality of water. Ambient water quality monitoring has also been carried out on the Kilcoole stream in recent years. This monitoring has indicated water quality of a generally good standard.

4.8 Landscape and Visual

4.8.1 Landscape Character

In accordance with the WCDP 2010-2016 and draft WCDP 2016-2022, the proposed development site is located on the periphery of the 'Eastern Corridor Area' and 'Urban Area' of Kilccole, given that it directly bounds the local area plan extent of Greystones, Delgany and Kilcoole.

The Eastern Corridor Area character type is described as being of medium vulnerability and under *"intense pressure from residential and other sporadic development"*. Urban Area character types are identified as being of low vulnerability.

4.8.2 Visual Envelope

The visual envelope is the extent of potential visibility of the site to or from a specific area or feature. The visual envelope for the development location is defined by views from the local L1042 Kilquade road to the west of the site and the R761 to the east of the site.

4.9 Archaeology, Architecture and Cultural Heritage

There are no Recorded Monuments, National Monuments, Protected Structures, Architectural Conservation Areas, NIAH structures or NIAH historic gardens within the proposed development area.

There are 35 no. Recorded Monuments, 6 no. protected structures, 3 no. NIAH structures and 5 no. NIAH historic gardens within 1 km of the proposed development.

4.10 Material Assets – Infrastructure

4.10.1 Utilities Infrastructure

The site is not serviced by electricity, water supply or telecommunications. Underground cabling associated with the distribution building owned by Eir adjacent to the second access point transverses a small portion of the site.

2 no. ESB power lines traverse the site. A 10kV line runs in a north west – south east direction across the northern portion of the site, while the Fassaroe-Greystones-Kilcoole 38kV line runs in a north-south direction along the eastern flank of the site

A foul sewer line and a main water supply line run across the existing site entrance in an east-west direction and service the residences in the vicinity. The site is not connected to the local sewer main nor is any surfacewater drainage infrastructure installed. Rainfall percolates naturally to ground. No fuels are stored onsite.

4.10.2 Non Renewable Resources

There are 2 no. quarries located within 5 km of the development site, c. 4 km and 5 km south west of the site, respectively.

4.10.3 Renewable Resources

No wind or solar energy facilities are located in proximity to the site.

5. SUMMARY OF POTENTIAL IMPACTS

5.1 Potential Impacts on Human Environment – Direct & Indirect

5.1.1 Population and Settlements

In the absence of mitigation measures, potential indirect impacts on population, residential settlements and community facilities in the vicinity of the proposed development may arise during the construction phase from a combination of noise, traffic and air emissions. These impacts are addressed in detail in other sections of this EIS.

The post construction phase of the proposed development will not directly impact on the population or settlement patterns in the study area.

5.1.2 Land Use

The proposed development will result in the land use of the site changing from the existing, i.e. a mini depot for WCC and an open undulating space dominated by scrub, to an Eco-park development for local and community use post construction.

The land use in the immediate and wider site vicinity will not be directly or indirectly changed or impacted upon as a result of the proposed development.

5.1.3 Local Employment and Economic Activity

The impact of the proposed development during the construction phase is anticipated to be directly positive as some employment will be created on site for the duration of this phase, which is envisaged to last 8-15 months.

The impact of the proposed development during the post-construction phase is anticipated to be neutral as minimal upkeep of the site will be required by Council staff, with extra job creation not envisaged.

5.1.4 Transport Network

The potential direct and indirect construction and post-construction phase impacts in the absence of mitigation measures on the local road network are summarised in Section 5.3.

5.1.5 Utilities

No direct or indirect impact are envisaged on any utilities during the construction and post construction phases.

5.1.6 Recreation, Amenity and Tourism

The proposed Pretty Bush Eco-park will positively benefit the local communities through provision of a recreational outlet and open space for walking activities. It will also have positive tourism related benefits for the wider community through the provision of communal space with potential for alignment with the eco-tourism initiatives of WCC.

Potential construction phase impacts associated with traffic, noise, air emissions, surface water quality and landscape that could have an indirect impact on tourism in the local area are addressed in detail in other sections of this EIS.

5.2 Potential Impacts on Air Quality and Climate – Direct & Indirect

5.2.1 Climate

The proposed development at Kilquade, over the construction and post-construction phases, will, through facilitating regional recovery of dredge spoil by providing required waste management infrastructure, positively, albeit minimally, and indirectly, contribute to achievement of the national commitments regarding climate change.

Indirect impacts on climate change will be minimal given the inert nature of the material to be placed, i.e. no greenhouse gas potential will result from the management of this type of waste material.

5.2.2 Air Quality

Dust Emissions

An assessment of likely dust emissions from the construction phase of the proposed development, undertaken according to UK Air Quality Guidance, indicated that there is no significant direct impact from dust emissions. The risk posed from the earthworks activities to take place on site with no mitigation applied is deemed to be low.

Vehicle Emissions

The proposed development will contribute to a negligible, temporary negative direct impact on ambient air quality during the construction phase.

There will be an overall maintaining of existing values or slight increase in some pollutant concentrations for the duration of the construction phase at the roads nearby the site. Emissions from proposed traffic movement associated with the construction phase, in addition to existing traffic levels, will be comfortably within the relevant air quality guidelines.

5.3 Potential Impacts on Roads, Traffic and Transportation – Direct & Indirect

5.3.1 Construction Phase

It is estimated that the construction phase of this development (the haulage of dredge spoil from Bray to the site and associated works at the site) will result in an additional 23,610 trips, whereby a trip is a single road journey either in or out of the site. Approximately 84% of these trips will be by Heavy Goods Vehicle (HGV).

Construction phase traffic is estimated to last between 12 and 24 months. The most intense period of increased traffic will occur during the haulage of dredge spoil to the site. The haulage route used will make use of the N11, the R774, the R761 and the L1042. Construction phase traffic will result in an increase of 0.2%, 0.8%, 0.8% and 4.5% from the average daily traffic on the N11, R774, R761 and L1042 roads, respectively.

Prior to implementation of appropriate mitigation measures, the additional construction phase traffic has the potential to lead to a temporary, slight to moderate negative direct impact on the road network in the vicinity of the subject site. Without mitigation the proposed development has the potential to delay and disrupt road users, soil public roads and result in unsafe turning manoeuvers entering and exiting the site.

5.3.2 Post Construction Phase

When the Pretty Bush Eco-park is developed and open to the public, it will be accessed primarily by pedestrians accessing the site. No dedicated car parking spaces will be provided therefore no significant traffic is anticipated to be associated with the post construction phase of the development.

The open area adjacent to the pedestrian entrance shall be utilised for ad hoc Wicklow County Council activities only and will be gated and remain inaccessible to the public. It is estimated that, on average, no more the 2 LGVs would access the site per day (4 trips/day).

Due to the extent of sightlines form the existing site entrance, there is a potential safety impact with regards to vehicles turning right when exiting the site as visibility between the two streams of traffic (eastbound traffic on the L1042 and traffic exiting the site) is reduced when compared to the DMRB requirements.

Potential post-construction phase impacts from the development include unsafe pedestrian access and unsafe vehicular access.

5.3.3 Cumulative Traffic Impacts

No cumulative traffic impacts are envisaged in relation to traffic.

5.4 Potential Impacts on Noise – Direct & Indirect

The main scope for potential impacts will arise during the construction phase of the proposed development. The construction phase will comprise the clearance of vegetation from the site, the placement of waste materials and the construction of the Pretty Bush Eco-park features.

5.4.1 Site Clearance Works

The removal of the vegetation will be carried out using a chain saw (or similar) and other hand tools. Other plant expected to be utilised are a 13.5 tonne tracked excavator, a dumper and a loading shovel with grab attachment. These are the principal sources of noise emanating during this phase.

Predicted noise values have been calculated and compared with standard values. All predicted values comply with standard limits with the exception of one area within 45 m of the site clearance works. Mitigation measures will be implemented for this area and all areas within 55 mm of the main site clearance activity area.

5.4.2 Material Placement

Following site clearance, the placement of dredge spoil materials and imported topsoil will employ a tracked excavator, a dumper and a loading shovel with grab attachment.

Predicted noise values exceed standard values, indicating that there will be a direct adverse impact without the implementation of appropriate mitigation measures. Mitigation measures will be needed.

5.4.3 Cumulative Noise Impacts

Given the separation distances between the proposed development and other projects that could potentially be developed in the vicinity were they to be carried out at the same time, cumulative impacts are not considered to be likely to occur.

5.5 Potential Impacts on Flora and Fauna – Direct & Indirect

5.5.1 Construction Phase

Designated Sites

No direct impacts will arise as the proposed development site is not within the boundaries of any designated nature conservation site. A Natura Impact Statement (NIS) has been prepared for the proposed development which analyses potential indirect impacts on Natura 2000 sites.

Habitats

Vegetation clearance and infilling of the site with inert dredge material will result in habitat damage and loss. The most abundant habitat type within the development area which will be affected is scrub.

Terrestrial Mammals (excluding badgers)

Short term impacts to fauna will arise during the vegetation clearance and infilling works. However, given the duration of the impacts and the habitats present in the wider environment, affected mammals will be able to move to other locations until the disturbance has ceased. It is considered highly likely that any displaced mammals shall return to the area following the completion of replanting and landscaping works.

Badgers

The proposed development will result in the destruction of five setts (a main sett, an annex sett, a subsidiary sett and three outlier setts), while the construction work will also be carried out in close proximity to two other setts. The main sett is considered to be a breeding sett.

There will be some loss of foraging habitat (grassland, woodland and scrub) within the footprint of the proposed development.

The loss of sett and foraging habitat without mitigation would result in a significant impact to badgers utilising the site.

Bats

Foraging or commuting bats may suffer disturbance impacts during the infilling phase of the development through increased noise and lighting on the site.

Avifauna

It is considered that the main potential source of impacts on avian fauna will be as a result of the vegetation clearance works. Potential likely impacts of the proposed project on birds may be considered as:

- Possible loss or deterioration of habitats; and
- Disturbance or displacement of birds.

Aquatic Species and Habitats

There shall be no direct loss of aquatic habitats as a result of the proposed development.

There is the potential for the alteration of aquatic habitats due to the ingress of sediment or other pollutants. Indirect impacts arising from potential accidental releases of silt laden run off, hydrocarbons stored onsite and waste from onsite toilets and wash facilities, could arise during the construction phase.

5.5.2 Post Construction Phase

Designated Sites

No direct impacts are envisaged upon designated sites during the post construction phase as the proposed development is not located within the boundaries of any designated nature conservation site. Potential indirect impacts are considered separately in the NIS.

Habitats

There shall be no further habitat loss during the post construction phase of the proposed project, and therefore no further impacts on habitats.

Terrestrial Mammals (excluding badgers)

Human access to certain areas of the Eco-park will be discouraged. These areas will offer a potential sett location for badgers and shelter for other mammal species.

Any negative impact on terrestrial fauna during the post construction phase will be imperceptible.

Badgers

The creation of new scrub area and planting of native species will offer new habitat for foraging and shelter (setts). It is considered likely that badgers will reutilise the area following the completion of the Pretty Bush Eco-park.

Any negative impact to badgers during the post construction phase of the project will be slight.

Bats

Native species will be planted within the park to ensure that prey items are available to foraging bats. Lighting which can discourage bats will not be used at night within the park.

Any negative impacts on bats during the post construction phase of the project will be imperceptible.

Avifauna

The use of only native species within the park will offer good nesting and foraging habitat. The inclusion of an open area of rough grassland shall also offer foraging habitat, particularly for the kestrel and barn owl.

Any negative impact on birds during the post construction phase of the project will be imperceptible.

Aquatic Species and Habitats

Planting of native species within the Eco-park shall sure up the dredge material, which will have already been shaped upon placement. No further excavation works will be required during the post construction phase of the project. No impacts on aquatic species and habitats are therefore envisaged.

5.6 Potential Impacts on Soils, Geology and Hydrogeology – Direct & Indirect

The main scope for potential impacts on soils, geology and hydrogeology will arise during the construction phase of the proposed development. No impacts are likely to arise during the post construction phase.

The importation and placement of dredge spoil and topsoil, the completion of earthworks activities and the alteration of drainage at the site will all pose risks to soils, geology and hydrogeology. Without mitigation, the above activities could alter the hydrogeological balance of the site and result in increased levels of runoff, erosion and sediment release. The magnitude of these potential impacts, prior to mitigation, is considered to be of slight significance.

Given that the site geology and hydrogeology ranks as low importance, the significance of the potential impacts of the development on the soils, geology and hydrogeology of the area is determined to be imperceptible

5.7 Potential Impacts on Surfacewater and Drainage – Direct & Indirect

5.7.1 Construction Phase

Potential surfacewater and drainage related impacts which may arise during the construction phase include erosion, sedimentation, chemical pollution, and/or an increase in silt-laden run-off rates.

Activities during the construction phase i.e. site clearance works, waste placement activities, entrance & local road improvements and Eco-park development if unmitigated, would have a negligible to minor impact on receiving watercourses in terms of the above risks.

5.7.2 Post Construction Phase

Post construction phase activities are expected to have a negligible effect on the receiving watercourses, even prior to mitigation.

The main potential hydrological impact of the development is a minor (<0.1%) increase in run-off in the Kilcoole Stream following a storm event, due to the change in land use and a slight increase in impermeable ground conditions. Some infiltration will occur through the hardcore material of the walkway construction and the construction of site tracks and hardstanding areas will lead to a slight increase in hard standing area on the site. Surface water run-off will discharge to the drainage swales during rainfall events. During the post construction period the swales will have vegetated and will serve to further attenuate flows.

5.7.3 Potential Flooding

The risk of an increase in flooding is of negligible significance due to the small percentage increase in run-off to the catchments that will arise as a result of the proposed development.

5.8 Potential Landscape and Visual Impacts – Direct & Indirect

5.8.1 Potential Visual Impacts

During the site clearance works, operatives and machinery may be observed from local adjoining properties, with limited views also evident from nearby viewpoints.

Increases in truck movements to and from the site will be visible from houses directly bordering the site, with limited views also evident from nearby viewpoints.

There may be a localised temporary visibility of material placed in situ due to a colour contrast between the imported material and the surrounding landscape. This contrast will be short term in nature as the imported material will be top-soiled and planted immediately upon completion of the works and this vegetation will establish itself over a period.

5.8.2 Potential Impacts on Landscape Character

The proposed development will result in a temporary, direct, negative impact of low magnitude during the construction phase on the character of the landscape.

During the post construction phase, the site will return to its former nature due to re-establishment of vegetation and there will be no change to the character of the landscape.

5.8.3 Potential Impacts on Landscape Sensitivity

The sensitivity of the local landscape is identified as being low to medium. The works proposed during the construction phase and impacts on landscape sensitivity resulting from same are described as low in significance and magnitude, direct and temporary in nature.

Post construction, there will be no discernible deterioration in the sensitivity of the landscape, resulting in a neutral impact on landscape sensitivity.

5.9 Potential Impacts on Archaeology, Architecture and Cultural Heritage – Direct & Indirect

5.9.1 Construction Phase

As there are no Recorded Monuments, National Monuments, Protected Structures, Architectural Conservation Areas, NIAH structures or NIAH historic gardens within the proposed development area, there will be no direct impact on the recorded archaeological, architectural or cultural heritage resource during the construction phase. Should any previously unrecorded archaeological remains exist within the development area, there will be a permanent direct impact on this resource.

It is considered that there will be an imperceptible construction visual and noise impact on the archaeological, architectural and cultural heritage resource during the construction phase.

5.9.2 Post Construction Phase

It is considered that there will be an imperceptible operational visual and noise impact on the archaeological, architectural and cultural heritage resource during the post construction phase.

5.10 Potential Impacts on Material Assets – Infrastructure – Direct & Indirect

5.10.1 Property Values

As the proposed development is not comparable to a ‘general’ waste facility, direct or indirect negative impacts on property values in the wider locality are not predicted. Impacts in relation to noise, dust or traffic will be temporary only and will be confined to the construction phase. There is the potential for minor increases in property values in the locality due to the presence of the Eco-park, a recreational resource.

5.10.2 Utilities Infrastructure

There will be no direct or indirect impacts on water or sewer utility or electrical infrastructure due to the proposed development.

5.10.3 Access

A positive direct impact will result due to the upgraded site access.

5.10.4 Non-Renewable Resources

As there will be no winning of rock or stone onsite, no impact will result on mineral deposits at the site. There will be no additional requirements for non-renewable resources and no direct or indirect impacts on same.

5.10.5 Renewable Resources

The proposed development will not directly or indirectly impact potential future renewable resources in the vicinity of the site or within the site curtilage.

6. SUMMARY OF MITIGATION MEASURES

6.1 Mitigation Measures for the Human Environment

6.1.1 Population and Settlements

Appropriative mitigation measures for potential direct and indirect impacts on population and settlements associated with traffic, noise and air emissions are identified in their respective sections.

6.1.2 Land Use

The development of the Pretty Bush Eco-park in itself is a mitigating measure for the change of land use within the site boundary from a wild, inaccessible area to an accessible Eco-park for community use.

Mitigation measures provided in relation to the direct impact on the ecology of the area, which is closely related to the land-use, are outlined in Section 6.5.

No mitigation measures are proposed in relation to land use beyond the development boundary, given the lack of direct and indirect impacts on these lands.

6.1.3 Local Employment and Economic Activity

No mitigation measures are proposed in relation to local employment and economic activity as the proposed development is considered as having positive (albeit slight), direct and indirect impacts.

6.1.4 Transport Network

Mitigation measures in relation to traffic and transport are presented in Section 6.3.

6.1.5 Utilities

No mitigation measures are proposed in relation to utilities, given the lack of significant direct and indirect impacts resulting from the proposed development.

6.1.6 Recreation, Amenity and Tourism

The provision of the Pretty Bush Eco-park in itself is a positive mitigation measure in relation to the amenity of the locality in terms of recreational options and open spaces and the tourism potential of the locality, given the eco-tourism potential of the site.

6.2 Mitigation Measures for Air Quality and Climate

6.2.1 Climate

As it is not envisaged that there will be negative impacts on the climate as a result of the proposed development, no mitigation measures are proposed.

6.2.2 Air Quality

Dust Emissions

While the risk from dust impacts at the site during the construction phase is considered to be low, a number of mitigation measures will nonetheless be implemented. These are outlined in detail in Volume 2 of this EIS.

Some of the mitigation measures to be implemented include the development and implementation of a dust management plan, the recording of and response to dust complaints received, the completion of weekly dust inspections, the implementation of a maximum speed limit of 15 km/h on facility roads and the availability of an adequate water supply for effective dust suppression.

Vehicle Emissions

Predicted vehicle emissions associated with the proposed development are within the relevant air quality guidelines and therefore will not impact on ambient air quality. No mitigation measures are required.

6.3 Mitigation Measures for Roads, Traffic and Transportation

6.3.1 Mitigation by Design (Route Selection)

The haulage route proposed utilises national and regional roads in so far as is possible. The use of local roads is limited to a 100 m long section of the L1042 from the R761 to the site entrance.

6.3.2 Construction Phase

Existing road markings outside the main entrance will be modified to allow for vehicles exiting the site to turn right without crossing the ghost island markings illegally.

A detailed Traffic Management Plan (TMP) will be produced prior to construction works commencing at the site. The TMP will result in the implementation of a number of mitigation measures. Examples include the appointment of a Traffic Management Coordinator, the identification of roads to be used and not to be used, the completion of site inductions and the use of wheel cleaning facilities. The use of appropriate road signage and a traffic banksman will be used to mitigate potential issues arising from presence of reduced sightlines on the L1042 during the construction phase.

6.3.3 Post Construction Phase

An entrance to the yard area will be constructed, existing footpaths shall be upgraded and a scheme of road markings will be agreed with the roads authority. Further modifications will be made to the road markings outside the main entrance in the form a provisions for a defined crossing point for pedestrians to cross the L1052 to gain access to the Eco-park, while permanent road signs shall be installed to warn eastbound traffic on the L1042 of right-turning traffic exiting the Pretty Bush Eco Park.

6.4 Mitigation Measures for Nosie

A number of general mitigation measures to reduce impacts from noise and vibration will be implemented.

If deemed necessary, moveable acoustic fencing will be installed around the works area. This fencing typically achieves a sound level reduction of 15 dB when installed correctly. Regular maintenance of plant and machinery will be carried out during the construction phase to limit noise impacts. No waste handling activities will occur overnight to ensure no noise impacts arise at this time.

Speed limits of 15 kph will be enforced on site to minimise noise impacts. A site point of contact will also be made available to the local community who can advise on potential noise related issues.

6.5 Mitigation Measures for Flora and Fauna

Project Ecologist

An appropriately experienced Project Ecologist will be employed during the construction phase to ensure that all mitigation measures are adequately implemented.

Habitats and Flora

The area of the proposed works will be kept to the minimum necessary to minimise disturbance to habitats and flora. Designated access points will be established within the site and all construction traffic will be restricted to these locations. No disturbance will occur to habitats or flora outside the proposed development area.

Terrestrial Mammals (excluding bats)

Construction operations within the proposed site area will take place during the hours of daylight to minimise disturbances to faunal species at night. A badger derogation licence has been received in relation to the destruction of badger setts within the footprint of the development. All conditions attached to this licence, including specific timelines for sett destructions and the construction of an artificial sett, shall be carried out in full. All construction staff will be given toolbox talks to notify them of the potential impact to badgers and the local ecology of the site.

Bats

Supervision of clearance works by a Project Ecologist, the completion of all construction operations during daylight hours and the minimal use of lighting all represent mitigation measures which will be adopted to minimise impacts on bats using the site.

Avifauna

Removal of vegetation and scrub will be undertaken outside of the bird breeding season to help protect nesting birds. Construction operations will take place during daylight hours to minimise disturbances to roosting birds or active nocturnal bird species.

Water Quality Measures

A number of mitigation measures relating to water quality will be implemented. Examples include the implementation of a buffer zone where no activities take place around the eastern stream of the site, the immediate removal of vegetation from the site following clearance and the use of a lock system on all taps, nozzles or valves utilised onsite.

General Eco-Park Development Measures

A number of general mitigation measures relating to the Eco-park development will also be implemented. Examples include the planting of native species only, the mounting of barn owl and bat boxes at suitable locations within the site and the provision of pathways for visitors to use within the park.

6.6 Mitigation Measures for Soils, Geology and Hydrogeology

6.6.1 Mitigation by Design

With regard to the proposed development, detailed design best practice will be implemented. Examples of such best practice include the use of a suitably qualified and experienced geotechnical engineer or engineering geologist and the completion of a design risk assessment and method statement for all of the works to be carried out.

6.6.2 General Mitigation Measures

A number of general mitigation measures will be taken to reduce impacts on soils, geology and hydrogeology from the proposed development.

Specific waste acceptance criteria will be applied for the imported material and a weekly random characterisation of this material will be carried out. Imported soil will be placed and levelled as soon as possible to mitigate against erosion and sedimentation. Refuelling of machinery and plant will only occur off site to mitigate against possible contamination. Temporary cuts/excavations will be adequately supported and protected against the ingress of water or erosion.

The existing groundwater wells will also be monitored for water level and water quality before, during and after the construction phase to ensure that there is no long term impact on the hydrogeology of the area.

6.7 Mitigation Measures for Surfacewater and Drainage

6.7.1 Mitigation by Design

Proposed drainage measures to reduce and protect the hydrological regime and water quality from the potential impacts during the construction of the proposed development are as per the drainage design outlined in detail in the main EIS. These include measures to prevent runoff erosion from vulnerable areas and consequent sediment release into the nearby watercourses to which the proposed development site drains.

6.7.2 Mitigation Measures for the Construction Stage

A significant number of mitigation measures are outlined in the main EIS and these include, *inter alia*:

- stilling ponds to be put in place in advance as construction progresses across the development
- temporary material storage areas to be monitored to manage any potential loss of suspended solids to surface waters
- contractor to ensure that erosion control, namely silt-traps, silt fencing and swales are regularly maintained during the construction phase;
- Re-profiling of the stream in the west of the site, using suitable material, shall take place in dry weather only as far as possible, in order to minimise the disturbances to any waters which may flow through this ditch
- settlement pond to be constructed in line with the re-profiled stream during the construction phase to ensure that any suspended solids from the placed material
- refuelling of plant during construction to only be carried out at designated refuelling station locations on site
- any other diesel, fuel or hydraulic oils stored on site to be stored in bunded storage
- portaloos and/ or containerised toilets and welfare units will be used to provide toilet facilities for site personnel.
- A Construction Environmental Management Plan (CEMP) has been prepared

6.7.3 Mitigation Measures for Post-construction, Flooding and Water Quality

Post construction, Wicklow County Council will have responsibility for maintaining the drainage system at the finished site.

No specific mitigation measures are proposed in relation to flooding, given the minimal flood risk impact arising.

Water quality monitoring of the surface waters on site will be carried out in accordance with the waste licence for the site, once obtained from the EPA. The surface water quality parameters to be monitored and the frequency at which these parameters will be monitored will be in accordance with the details specified in this licence.

6.8 Landscape and Visual Mitigation Measures

6.8.1 Mitigation by Design

Through placement of dredge spoil material in lower parts of the site, the line of sight across the site will remain wholly the same, and views into, out of and across the site will remain very similar to what they are. The maintaining of buffer zones along the site boundaries will ensure that screening provided by the tall trees at these locations will continue to be maintained. The implementation of a Landscaping Plan will ensure that the site returns to its previous state, in terms of the character of the landscape, i.e. a wild vegetated area.

6.9 Mitigation Measures for Archaeology, Architecture and Cultural Heritage

There are no mitigation measures available to offset the imperceptible visual and noise impact on the archaeological, architectural and cultural heritage resource during the construction and post construction phases.

6.10 Mitigation Measures for Material Assets – Infrastructure

There is no requirement for mitigation measures in relation to material assets as it is considered that the proposed development will not impact in any significant manner on the existing material assets in the surrounding environment.

7. SUMMARY OF RESIDUAL IMPACTS

7.1 Residual Impacts on the Human Environment

Residual impacts resulting from the implementation of mitigation measures identified will result in the development of an Eco-park (with the construction phase managed under licence from the EPA) that will remain as a recreational outlet for the community, with an overall positive impact on the locality.

Following the implementation of mitigation measures outlined for noise, traffic and air emissions, the proposed development will not have a significant impact on the human environment.

7.2 Residual Impacts on Air Quality and Climate

Following the implementation of mitigation measures and with the implementation of good housekeeping and management procedures and techniques, it is predicted that the proposed development will not have a significant impact on ambient air quality or the local or national climate.

7.3 Residual Impacts on Roads, Traffic and Transportation

7.3.1 Construction Phase

Following the implementation of mitigation measures, there will be a slight, temporary (i.e. for the duration of the construction phase), direct negative impact during the construction period. This impact will be largely associated with additional HGVs accessing and exiting the site.

7.3.2 Post Construction Phase

Following the implementation of mitigation measures, there is anticipated to be a negligible impact on the local road network resulting from access to the Pretty Bush Eco-park.

7.4 Residual Impacts on Noise

The use of acoustic screens will reduce the predicted noise levels by approximately 15dB, reducing the impact of the site works during the construction phase to acceptable levels. The predicted levels will need to be confirmed with on-site monitoring to confirm compliance with the construction and licensed limits.

Post construction, there will be no residual noise impacts.

7.5 Residual Impacts on Flora and Fauna

With the implementation of mitigation measures, the proposed development will result in an overall imperceptible to slight residual impact on ecology.

7.6 Residual Impacts on Soils, Geology and Hydrogeology

With the implementation of mitigation measures, residual impacts on soils, geology and hydrogeology after are predicted to be imperceptible.

7.7 Residual Impacts on Surfacewater and Drainage

Following the implementation of mitigation measures identified. The residual risk to the receiving watercourses would be negligible during the construction period and negligible during the maintenance/operational stage of the facility

7.8 Landscape and Visual Residual Impacts

No significant residual impacts are envisaged after mitigation. There will be no visual intrusion or obstruction of existing views around the site. Some minor, slight variation in terms of vegetation colouring may be observed at different times of the year but this is considered to be a neutral impact. The visual character of the development site will remain as it is.

7.9 Residual Impacts on Archaeology, Architecture and Cultural Heritage

There will be an imperceptible residual construction or operational visual and noise impact on the archaeological, architectural and cultural heritage resource.

7.10 Residual Impacts on Material Assets – Infrastructure

Residual impacts on materials assets due to the proposed development are considered to be negligible.

8. INTER-RELATIONSHIPS & INTERACTIONS

The proposed development to accept up to 200,000 tonnes per annum of dredge spoil material at the Pretty Bush site and subsequently an Eco-park facility there has the potential to cause both positive and negative impacts on the environment. Based on an assessment of the potential impacts identified in the previous sections, the project team have identified the potential impact resulting from the proposed development (prior to mitigation) and these are identified as follows:

Potential Negative Effects

- increase in noise levels during Construction phase
- increase in traffic levels during Construction phase
- potential for dust generation during Construction Phase
- impact on existing ecology of the site during Construction Phase
- potential impact on surface water quality Construction phase

Potential Positive Effects

- provision of beneficial recreational outlet for the locality and wider area
- provision of ecological sanctuary when Eco-park is complete
- potential for additional eco-tourism benefits to the locality

Although separate and unrelated to the proposed development, the other developments in the vicinity of the site that could have the potential to impact on the environment on greater scale than the proposed Pretty Bush waste soils recovery facility & Eco-park alone, when considered in combination with the Pretty Bush development. These potential combined cumulative effects have been considered in a number of sections in the EIS, namely air quality & climate, roads, traffic & transportation, noise and flora & fauna.

Table 8.1 summarises the impacts of the proposed development on each environmental aspect. Any adverse impacts are primarily localised in their extent and that their significance can be described as slight and the table also outlines a number of positive impacts from the proposed development.

Table 8.2 outlines the interactions between the proposed Pretty Bush development and the other development identified when considered under the cumulative topics identified.

Table 8-1: Summary of Relative Significance of Impacts with and without Mitigation

Topic Area	Description of Impact	Geographical Scale					Potential Impact	Duration	Significance Without Mitigation	Significance With Mitigation
		I	N	R	C	L				
Human Beings	Landuse					x	Neutral	Pe	-	-
	Employment generation				x	x	Positive	Tp - St	Slight	Slight
	Amenity and Tourism				x	x	Positive	Lt	Slight	Slight
Transportation	Additional Road Traffic					x	Adverse	Tp	Moderate	Slight
Noise	Construction phase noise					x	Adverse	Tp	Moderate	Slight
Ecology	Impacts on designated areas			x	x	x	Adverse	Tp - St	Slight	Imperceptible
	Impacts on flora and fauna onsite					x	Adverse	Tp - St	Moderate	Slight-
Geology / Hydrogeology	Soil and geology impacts					x	Adverse	Tp	Imperceptible	Imperceptible
	Groundwater impacts					x	Adverse	Tp	Imperceptible	Imperceptible
Hydrology / Surface water	Surface water quality impacts					x	Adverse	St - Mt	Slight	Imperceptible
	Hydrological impacts					x	Adverse	Mt - Lt	Imperceptible	Imperceptible
	Flood risk impacts					x	Adverse	Mt - Lt	Imperceptible	Imperceptible
Air & climate	Air emissions					x	Adverse	Tp	Slight	Imperceptible
	Climate impacts			x	x	x	Adverse	Tp	Imperceptible	Imperceptible
Landscape / Visual	Visual Impact of operations					x	Neutral	Tp - St	-	-
Cultural Heritage	Construction & post construction impacts					x	Neutral	Mt - Lt	-	-
Material Assets	Impacts on material assets					x	Neutral	Mt - Lt	-	-

Scale		Duration		Significance
I -	International	Tp -	Temporary (<1 yr)	Imperceptible
N -	National	St -	Short term (1-7 yrs)	Slight
R -	Regional	Mt -	Medium term (7-15 yrs)	Moderate
C -	County	Lt -	Long Term (15-60 yrs)	Significant
L -	Local	Pe -	Permanent (60+ yrs)	Profound

Table 8-2: Summary of Cumulative Impacts of the Proposed Development with other developments

	Cumulative Impact of proposed development with other developments	Significance of Cumulative Impact	Scale of Cumulative Impact	Comment
Human Beings	Landuse, employment, amenity & tourism	Neutral	Localised	Proposed development will generate some increased employment in the locality during the construction phase to augment that which may be provided as part of other development
Traffic	Additional traffic	Slight (negative)	Localised	Proposed development will increase traffic volumes above the existing, potential for additional slight, negative impact in combination with one or more of the identified developments, should haulage routes be the same; however, road network considered to have sufficient capacity and none of the other developments proposed impact on the L1042
Noise	Additional noise from proposed development during the Construction phase above the existing	Slight (negative)	Localised	Separation of Pretty Bush site from other developments identified mitigate any potential increased cumulative impacts
Flora and Fauna	Impacts on designated areas	Imperceptible	Localised	None of the other identified developments are considered to impact on designated sites in combination with the proposed Pretty Bush development
	Impact on flora and fauna	Slight	Localised within development site	Impacts on flora and fauna as a result of the Pretty Bush development will be limited to the Pretty Bush site; none of the other development sites are considered to be of high ecological values and are removed from the Pretty Bush site.
Soil, Geology and Hydrogeology	Soil and geology impacts	Imperceptible	Localised within development site	There will be no excavations required as part of the proposed development and placement will be of inert dredge spoil material in the Pretty Bush site only; other developments may impact at their location locally but no cumulative impacts will occur
	Groundwater impacts	Imperceptible	Localised	Only inert dredge spoil material will be placed onsite, with no impact on hydrogeology of the Pretty Bush site; nor interaction with hydrogeology of other development sites

	Cumulative Impact of proposed development with other developments	Significance of Cumulative Impact	Scale of Cumulative Impact	Comment
Hydrology / Surface Water	Hydrological, water quality, and flood risk impacts	Imperceptible	Localised	Mitigation measures included for surface water run-off will ensure impacts associated with the proposed development on the existing hydrological regime are minimal; separation from other development sites ensures no cumulative impacts
Air and Climate	Air emissions	Imperceptible	Localised	Mitigation measures for air emissions during the Construction Phase will minimise impacts on the local environment; separation from other development sites ensures no cumulative impacts
Landscape and Visual	Cumulative visual effect on landscape and visual amenity	Neutral	Localised	No impacts are envisaged on the landscape and visual amenity of the locality as a result of the proposed development; separation from other development sites ensures no cumulative impacts