

3 THE DEVELOPMENT

3.1 Introduction

This section of the EIS details the principal elements of proposed development of the Pretty Bush Ecopark. It includes a description of the existing site and the proposals in relation to the placement of material at the site, environmental management practices to be employed and the post construction use of the site.

3.2 Description of the Existing Environment

3.2.1 Site Location & Use

The site entrance is located on the L1042 local Kilquade road approximately 100 m east of the junction with the R761 Kilncarrig (Delgany – Kilcoole) regional road, 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 is **known locally as “The Rocks” and is owned by Wicklow County Council**, who purchased the land in 1998. It was intended at the time that the site be used **as a ‘borrow pit’ for the construction of the Greystones Southern Access Route**. Currently, a portion of the site is utilised as a mini depot by WCC for road maintenance.

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. Figure 3.4 presents the site boundary and existing contour levels.

Directly bordering the site to the north and west are a number of residential dwellings, a distribution building owned by Eir and the local L1042 road, while the site is bordered to the east, south and south west by the Kilncarrig Road, agricultural fields and a number of individual dwellings.

The Farrankelly Close residential development is located directly opposite (north) from the main site access.

3.2.2 Site Access

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. The existing main site entrance is shown in Figures 3.1 & 3.2.



Figure 3-1: Existing main site entrance (looking from east)



Figure 3-2: Site Entrance (setback from local road)

A secondary access point to the site is located approximately 175 m east of the main entrance, adjacent to the Eir distribution building. This comprises an agricultural type gate, directly off the local L1042 road. This entrance is shown in Figure 3.3 (small gate on left hand side after fencing).



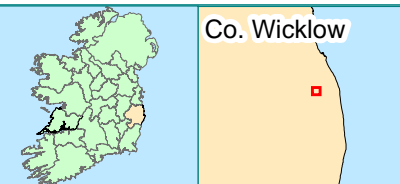
Figure 3-3: Second site access point

3.2.3 Site Security

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.

3.2.4 Mini depot

A portion of the site, approximately 200 m², 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.



Co. Wicklow

Legend

- Study Boundary
- 1m Contours

Date 27/06/2016

Name Of Client
Wicklow County Council

Name Of Job
Waste Licence, Planning & EIS for
Waste Soils Recovery Facility

Title Of Figure
Existing Site Layout

Scale Used 1:3,500 @ A4

Figure No. 3.4	Rev A
----------------	-------



CONSULTANTS IN
ENGINEERING &
ENVIRONMENTAL
SCIENCES

Core House, Roudsduff Rd., Cork, Ireland. T +353 21 4964133, F +353 21 4464

Unit 14 JB Plaza, North Park Business Park, Dublin 11, Ireland. T +353 1 6583000, F +353 1 6583501

www.fehilytimoney.ie, E: info@ftco.ie

3.2.5 Site Infrastructure

Accommodation

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

Site Services

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.

Utilities

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, terminating adjacent to the existing Eir telecom distribution building on the north eastern boundary of the site.

The Fassaroe-Greystones-Kilcoole 38kV line runs in a north-south direction along the eastern flank of the site and terminates at a pylon located approximately 40 m from the main facility entrance. From here, the cable travels underground as far as the main entrance and continues to run underground in an easterly direction.

Drainage infrastructure

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.

3.3 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

3.3.1 Lifespan of the Development

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, dependent on progression of the River Dargle Flood Defence Works and considering potential seasonal ecological constraints that may apply.

Thereafter, the Pretty Bush Eco-park will remain as a permanent community recreational outlet.

For the purpose of this EIS, the site clearance works, the dredge spoil placement works and the Pretty Bush Eco-park development is described as the "Construction Phase" while the use of the site as an Eco-park is described as the "Post-construction Phase".

3.3.2 Proposed Site Activities

Type and Volume of Material to be managed

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

Table 3-1 presented the estimated quantities of each to be managed and their respective European Waste Catalogue (EWC) code.

Table 3-1: Quantities of material to be managed onsite

EWC Code	Waste Description	Quantity to be managed	Source
20 02 02	Soils & stones	6,000 – 8,000 tonnes (3,000 – 4,000 m ³)	Imported from other development locations (greenfield sites only)
17 05 06	Dredging spoil other than those mentioned in 17 05 05	200,000 tonnes (100,000 m ³)	Imported from the River Dargle Flood Defence Scheme
02 01 07	Wastes from forestry *	2,000 – 4,000 tonnes (4,000 – 8,000 m ³)	Generated from onsite clearance works
20 02 01	Biodegradable waste **		

* where this refers to gorse and tree clearance

** where this refers to grass & vegetation cuttings

It is possible to only estimate at this juncture the quantity of vegetation to be cleared from the site given potential seasonal variation. The clearance of the site is addressed in more detail in Section 3.3.3 following.

Licensable Activity

The acceptance and placement of dredge spoil at the Pretty Bush site is an activity that warrants a waste soil recovery facility³ licence from the EPA, as outlined in Section 1.5. In addition to the planning permission application for the proposed development, a separate application is being made to the EPA for the required recovery licence **by WCC, who will be the licence holder (i.e. the "licensee")**.

The acceptance and placement of dredge spoil is considered a waste management recovery⁴ activity given the beneficial use of this material in a land redevelopment context.

The applicable and relevant classes of the Fourth Schedule (Recovery Activities) of the Waste Management Act 1996, as amended, are shown in Table 3.2.

³ 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.

⁴ Where recovery means "any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy": as per Article 3 of 2008/98/EC

Table 3-2: Recovery Activity Classes, in accordance with the WMA 1996, as amended

Fourth Schedule Waste Recovery Activities	
Class R2	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological processes).
Class R5	Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.
Class R13.	Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).

The waste soils recovery facility licence will govern the acceptance and placement of topsoils and dredge spoil at the site and apply operational conditions to ensure the minimisation of potential environmental impacts during the Construction Phase and for a period thereafter.

After a period of time agreeable to the EPA, and upon demonstration of no residual environmental impacts due to the presence of the facility, to be demonstrated by ongoing environmental monitoring in accordance with the licence to be granted, the licensee i.e. WCC, can surrender the licence, such that an active waste facility classification no longer applies to the site.

Best Available Techniques (BAT)

Best Available Techniques (BAT) refers to the application of approved methods and means of mitigating potential environmental impacts for EPA licenced facilities. BAT is considered further in Section 3.4.2 in reference to environmental controls to be employed.

Hours of Operation

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.

3.3.3 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.

Vegetation removal is required as, were dredge spoil material to be directly placed on top of existing vegetation, there would be potential for leachate generation when the vegetation decomposes. Therefore, the site must first be cleared of vegetation to prevent this.

Means of Clearance

In order to ensure the most efficient and environmental removal of vegetation, the removal of the vegetation will be carried out in two steps that will run concurrently:

- Firstly, the existing vegetation will be cut at the roots using a chain saw (or similar). This vegetation will be temporarily set aside prior to shredding on site.
- Secondly, the roots and stumps of the vegetation will then be pulled up and stockpiled, prior to removal from site.

The removal of vegetation will principally be undertaken by hand with the use of slash hooks, chainsaws and other hand tools. A number of items of plant will also be used in clearance work for the loading and movement of material, for the removal of roots and for the feeding of the shredder. Plant expected to be utilised onsite are:

- 1 no. 13.5 tonne tracked excavator (or similar)
- 1 no. dumper
- 1 no. loading shovel with grab attachment (or similar)

Phases of Clearance

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. An area will firstly be cleared on a centralised, flat location of the site that will be used as the staging area for the clearance works, and thereafter for placement works. A quantity of virgin rock/gravel will be imported for construction of temporary access route to the centralised staging area. Vegetation cleared in the construction of the staging area will be temporarily stockpiled in the area prior to shredding.

Figure 3-6 presents the site clearance phasing plan. It should be noted that an area of 11,650 m² (1.16 ha) at the southernmost portion of the site is not proposed for clearance in order to provide ecological mitigation, which is addressed in more detail in Section 11 of the EIS. In addition, a 15 m buffer of existing vegetation will be maintained along the eastern boundary and a 10 m buffer along the north western and the western boundaries (behind existing residences) as a screening and ecological mitigation measure.

From the central staging area, clearance will extend to the eastern and western boundaries, prior to working in a southerly direction as far as the southern portion of the site that will not be cleared. Where deposits of topsoil are identified during clearance, this material will be scraped back and stockpiled adjacent to the staging area for utilisation post placement of the dredge spoil material.

Shredding

A mobile shredder shall be located within the centralised staging area for the duration of the clearance works. A typical mobile shredding unit is shown in Figure 3.5.



(www.doppstadt.com)

Figure 3-5: Typical Shredding unit

Vegetation cleared will be brought to this area using the dumper and stockpiled until there is a sufficient quantity of material for shredding. The loading shovel will feed the shredder and the shredded vegetation will then be loaded directly to an 8 wheel tipping truck (or similar) for removal offsite to an authorised waste management facility for composting. Roots or stumps not suitable for shredding will be loaded directly to the tipping truck.

It is estimated that 1 vehicle trip per hour will result from the movement of shredded and unshredded material offsite for the duration of the clearance works.

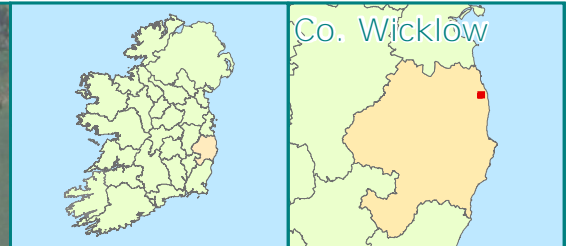
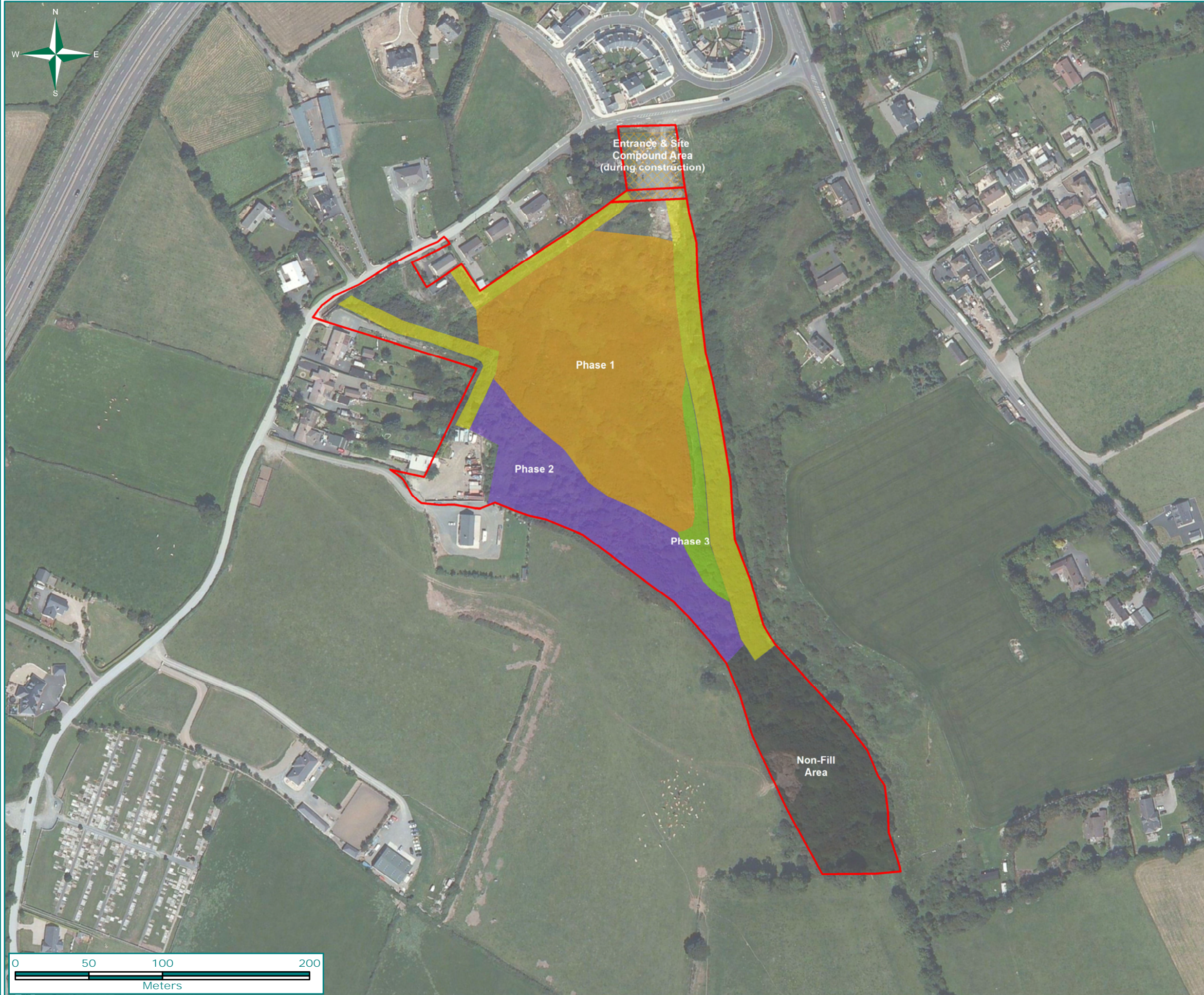
Duration of Clearance Works

It is envisaged that the site clearance works will be undertaken in a 6 – 8-week period. The shredding activities will vary depending on the nature of the vegetation and the throughput of the shredder but a conservative assumption will see shredding occurring for up to 6 hours per day.







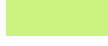
Environmental & Ecological Considerations

Environmental controls addressing noise, air, surfacewater, groundwater and traffic to be applied to the clearance activities are addressed in Section 3.4 and in relevant section of the EIS.

Section 11 of this EIS identifies measures to be undertaken in relation to the re-location of existing badger setts at the development location. Works associated with this re-location are identified in detail in Section 11 and will be undertaken prior to the site clearance works.



Legend

-  Study Boundary
-  Buffer Zones
-  Entrance & Site Compound Area (during construction)
-  Non-Fill Area
-  Phase 1
-  Phase 2
-  Phase 3

Date 11/07/2016

Client Name
Wicklow County Council

Project Title
Waste Licence, Planning & EIS for
Waste Soils Recovery Facility

Figure Title
Site Clearance Plan

Figure No. 3.6 Rev. A

Scale 1:2,500 @ A3



**FEHILY
TIMONEY
& COMPANY** CONSULTANTS IN
ENGINEERING &
ENVIRONMENTAL
SCIENCES

Core House, Pouladuff Road, Cork, T12 D773, Ireland
T: +353-21-4964133, F: +353-21-4464
Unit 16, J5 Plaza, North Park Business Park, Dublin 11, D11 PXT0, Ireland
T: +353-1-6583500, F: +353-1-6583501
W: www.fehilytimoney.ie E: info@ftco.ie

3.3.4 Construction Phase – Waste Placement Activities

Following site clearance (and provision of badger mitigation measures), the placement of dredge spoil materials from the River Dargle Flood Scheme works will commence.

Material shall be transported from its location at the River Dargle Flood Scheme works along an identified haul route (refer to Section 9) to the Kilquade site. Vehicles shall enter the site via the existing main entrance which shall be widened temporarily to facilitate vehicle movement, and material shall be brought to the central staging area that was previously used for the site clearance.

A stock pile of material shall be maintained to feed placement activities. Plant expected to be utilised onsite during the material placement phase are:

- 2 no. 13.5 tonne tracked excavator (or similar)
- 2 no. dumpers
- 1 no. loading shovel (or similar)

Waste Acceptance & Handling

A Waste Acceptance Plan has been developed and is included in Appendix 1 to this EIS. This plan addresses a number of topics, summarised in the following.

Waste Identification

The approach to waste acceptance at the site is informed by previous EPA waste soils recovery facility licences⁵ and the approach taken in considering the degree of characterisation/classification to be undertaken for each material type to be accepted. This approach is based on that taken by the EPA in relation to Article 27⁶ by-product notification for soil and stones.

This is based on the classification of the dredge spoil/soil & stone material as **either 'greenfield soil/stone' and 'non-greenfield soil/stone'.**

Greenfield soil/stone is defined as "soil and stone from land that has not been previously developed and is not contaminated soil and stone"⁷ while non-greenfield soil and stone is defined as "soil and stone that is not greenfield soil and stone."

Both types of material to be accepted at the facility i.e. 20 02 02 & 17 05 06 will originate from lands that **have not been previously developed and as such will be "greenfield soils/stone".**

Based on the identification of the waste to be accepted at the site as "greenfield soils" and in keeping with conditions applied in recent EPA licence for similar type developments, the waste acceptance criteria to be applied on site are as follows:

- Prior to placement of dredge spoil material at the site, a letter of suitability, as to the nature and suitability of the material for placement, shall be provided by a suitable person⁸ for the first 10,000 tonnes of material and a further letter of suitability shall be provided for each subsequent 10,000 tonnes of material.

Waste Characterisation

Basic characterisation will be carried out at the Kilquade facility on a weekly basis on a randomly selected delivery each of dredge spoil, sub soil and top soil.

⁵ W0272-01, Milverton Waste Recovery Facility; W0277-01, Huntstown Inert Waste Recovery Facility; W0280-01, Brownswood Inert Waste Recovery Facility

⁶ of the European Communities (Waste Directive) Regulations (S.I. No. 126 of 2011)

⁷ Contaminated soil and stone is defined as **"soil and stone that contains anthropogenic or man-made substances (such as rubble, concrete, bricks, metal and bitumen), that are not natural to the environment from which the material was extracted"**

⁸ A suitable, qualified, trained and experienced person who is a registered professional with chartered status (or equivalent) awarded by a relevant professional body and who has the requisite knowledge and experience required to issue a letter of suitability.

Information to be recorded will include:

- source of the waste
- vehicle registration
- origin of waste
- physical appearance of the waste (smell, colour, physical form)
- photographs
- classification code according to European waste list (CD 2014/995/EC)
- weight of load (if applicable)

A log of the weekly characterisations shall be maintained and kept on site for the duration of the works and for a period as required by the Agency in the facility licence. Should further basic characterisation be required by the EPA, as part of the facility licence, this will be agreed in advance with the Agency.

Weighing of dredge spoil material

Given the homogeneity of the materials to be accepted at the facility, it is proposed that weighing of loads be carried out on an intermittent basis during the haulage phase to verify weights of material being transported. The haulage of the dredge spoil material will be undertaken under contract through a tendering process and Wicklow County Council, as awarding entity, will stipulate within the contractual documentation, the requirement for diversion of a set number of haulage trucks to a designated Council weighing facility, over the duration of the haulage contract, suggested at one per day for the first month of the haulage contract, reducing thereafter.

This will provide certainty to Wicklow County Council in terms of verification of contractual obligation with the selected haulage contractor, as well as providing sufficient data to the EPA as part of the applicable waste licence information recording.

Waste Acceptance Procedures

The following procedures will be followed when accepting dredge spoil and topsoil materials at the Kilquade site.

1. Waste shall only be accepted at the facility from holders of valid waste collection permits issued under the Waste Management (Collection Permit) Regulations 2007, as amended, unless exempted or excluded.
2. Waste shall only be accepted at the facility from known contractors in accordance with any contract assigned by WCC for the haulage of dredge spoil and topsoil. No other third party waste shall be accepted at the facility.
3. Waste arriving at the facility shall be visually inspected (on-site verification) before and after unloading to confirm the nature of the waste and that it is as allowed for under the facility licence.
4. The documentation of waste arriving at the facility shall be checked at the point of entry to the facility. Subject to its verification, the truck number waste shall be recorded, a weighbridge docket provided to the gate attendant if applicable, and directed to its appropriate location onsite, as appropriate.
5. In the case of suspicion of contamination (from visual inspection) the waste shall be directed to a designated Waste Quarantine Area. Waste shall be stored under appropriate conditions in the quarantine area to avoid any nuisance or objectionable condition. The origin and nature of this material shall be examined and should any error or inconsistency be identified, the waste shall be rejected.
6. Rejected waste shall be removed from the facility at the earliest possible time to an off-site authorised facility.

In addition, measures for protection in relation to invasive species will be implemented and further detail is provided in Section 11 of this EIS.

Material Balance

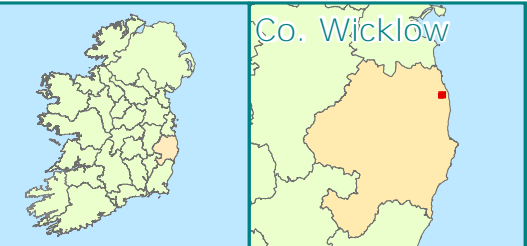
Up to 100,000 cu.m of dredge spoil is to be accepted for placement at the site. Laboratory tests indicate an average density of c 2 tonnes/cu.m, for this material, indicating an input tonnage of up to 200,000 tonnes per annum.

No 'cut' of material is proposed i.e. no excavation of soil/rock, other than limited soils removal (for subsequent replacement on site) during site clearance.

Waste Placement Phasing Schedule

Figure 3.7 presents the approximate phasing in which material placement will occur. Material stockpiled within the central staging area will be loaded into the dumper using the loading shovel, brought to the placement location and tipped, where it will be spread, compacted and graded using the excavator. 2 no. excavators will work simultaneously per phase.

Incoming dredge spoil material will be placed in layers of 600 – 900mm, with a number of layers being applied on each other where required. A 200 mm layer of topsoil, either imported to site or reclaimed from the site during the site clearance works, will be applied to the dredge spoil material during placement, in order to attain the finalised contours.



Legend

- Study Boundary
- Buffer Zones
- Entrance & Site Compound Area (during construction)
- Non-Fill Area
- Phase 1
- Phase 2
- Phase 3
- Phase 4

Date	11/07/2016	
Client Name	Wicklow County Council	
Project Title	Waste Licence, Planning & EIS for Waste Soils Recovery Facility	
Figure Title	Material Placement Phasing Plan	
Figure No.	3.7	Rev. A
Scale	1:2,500	@ A3

Core House, Pouladuff Road, Cork, T12 D773, Ireland
 T: +353-21-4964133, F: +353-21-4464
 Unit 16, J5 Plaza, North Park Business Park, Dublin 11, D11 PXT0, Ireland
 T: +353-1-6583500, F: +353-1-6583501
 W: www.fehilytimoney.ie E: info@ftco.ie

Initially, this topsoil will be grass seeded upon application in order to mitigate potential sediment control and to improve slope stability, prior to the planting activities to be undertaken as part of the Pretty Bush Eco-park development.

3.3.5 Construction Phase – Entrance & Local Road Improvements during Site Clearance and Placement phases

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.

3.3.6 Construction Phase – Pretty Bush Eco-park Development

Upon completion of the dredge spoil material and topsoil placement, with subsequent grassing, the development of the Pretty Bush Eco-park will commence. The time of year for the completion of the material placement works will influence the programme for the Pretty Bush Eco-park development as planting of vegetation can occur only at certain times of the year.

The Pretty Bush Eco-park development will comprise:

- Planting of the site in accordance with the Landscaping Plan
- Development of the site entrance and parking area
- Installation of various walkways throughout the Eco-park
- Installation of waymarkers and information signs

The layout of the proposed Pretty Bush Eco-park is provided in Figure 3.8, while detail of the Landscaping Plan is provided in Figure 3.9.

Landscaping Plan

The proposed landscaping plan is shown in Figure 3.9 and detail is provided as follows.

Proposed Tree Planting

It is proposed to plant 7 oak and 27 hawthorn and mountain ash, of varying standard classification, as appropriate.

Trees will be planted into planting pits of dimensions 1,000 x 1,000 x 800mm. These trees will be doubled staked with straight well-formed pressure treated poles driven 750mm into the ground (min. dia. 75mm). A horizontal cross brace (100 x 35 mm minimum) will be securely fixed to the two upright stakes. The trees will be securely tied to the cross brace, using a rubber buffer/spacer between the tree and cross brace.

Stakes will be cut off to leave a maximum of 1m above ground level. After planting trees shall be thoroughly watered with approximately 30 litres per tree. Any plants that die will be replaced. An area of one metre squared around all trees shall be kept weed free for 4 years to aid strong establishment. All ties will be checked annually to ensure that the tree is secure and that no damage has been caused. All stakes and ties will be removed once the tree has established adequate roots (approx. 3 years from planting).

Proposed Hedgerows

It is 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). The space between each row is 30cm. Plants within each row will be spaced at 33cm. Species will include c. 100 hawthorn, c. 40 holly and c. 40 blackthorn. Plants will be a minimum of 90cm tall when planted. Any plants that die will be replaced. An area of one metre squared around all plants shall be kept weed free for 4 years to aid strong establishment. Sightlines on the roadside boundary shall be maintained by regular pruning when necessary.

Planting Mix 1 - Areas of gorse, elder, Guelder rose

These areas will be planted with a mixture of gorse, elder, guelder rose. C. 1,100 of each species will be planted in groups of 50. Total number of plants c. 4,400. They will be planted at 1 m.sq spacing. This mixture will provide additional habitats and food for wildlife. All areas will be cultivated to a depth of 400mm. Any plants that die in the first three years will be replaced. An area of one metre squared around all plants shall be kept weed free for 4 years to aid strong establishment.

Planting Mix 2 - Areas of shrubby willow, elder and hazel and blackthorn.

These areas will be planted with a mixture of shrubby willow, elder and hazel and blackthorn.c. 2,300 of each species will be planted in groups of 50. Total number of plants c.9,200. They will be planted at 1 m.sq spacing. This mixture will provide additional habitats and food for wildlife. All areas will be cultivated to a depth of 400 mm. Any plants that die in the first three years will be replaced. An area of one metre squared around all plants shall be kept weed free for 4 years to aid strong establishment.

Planting Mix 3 - Areas of wildflower

These areas (10,000 m²) will be sown with pure Irish native wildflower (no grasses) seed mix at a rate of 3g per metre squared (30 kg). Final meadow will be cut and removed every 1 to 3 years.

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.

Further detail is provided in Section 9 in relation to amendments to the existing local L1042 road, but the existing ghost island (line markings) outside the site will be modified to include the following:

1. Provision will be made for vehicles exiting the site to turn right without crossing illegally over the ghost island
2. Provision will be made for a defined crossing point for pedestrians to cross the L1042 to gain access to the park.

Walkways, Waymarkers 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 to 1.3 km of walkways will be provided which will meander through the Eco-park, as shown in Figure 3-8. A variety of path surfacing will be considered during the detailed design process and options will include:

- Hoggin path - compactable groundcover that is composed of a mixture of clay, gravel, and sand or granite dust - once laid, the surface is permeable to water and therefore does not easily hold puddles or generate rapid surface runoff
- Mulch path - Bark, wood chips and other types of organic mulch make soft paths that blend well with natural settings
- Gravel path - washed gravel, crushed stone or smooth pebbles

A series of information signs will be erected at a number of locations along the walkways, with distance waymarkers to inform walkers/joggers. The information sign shall provide information of the species of flora and fauna that will be encountered within the Eco-park.

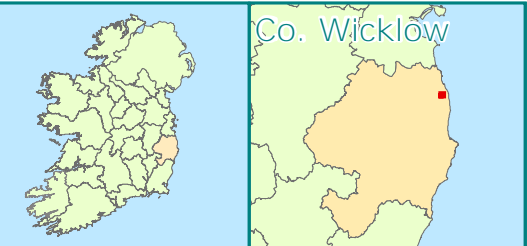
3.3.7 Post Construction Phase –Pretty Bush Eco-park

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.

Post construction, monitoring of the site shall be continue to be undertaken as described in Section 3.4.2 following. It is intended that, over a period of time to be agreed with the EPA, where monitoring identifies no impacts resulting from the Eco-park, the licence for the site shall be surrendered, thus removing the waste management designation from the site.



Legend

- Study Boundary
- Buffer Zones
- Non-Fill Area
- Fencing
- Bottom of Bank
- Eco-Walk Track
- 5m Contours
- 1m Contours

Date 12/07/2016

Client Name
Wicklow County Council

Project Title
Waste Licence, Planning & EIS for
Waste Soils Recovery Facility

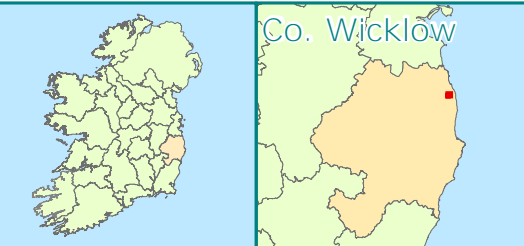
Figure Title
Proposed Pretty Bush Eco-Park Layout

Figure No. 3.8 Rev. A

Scale 1:2,500 @ A3

**FEHILY
TIMONEY
& COMPANY** CONSULTANTS IN
ENGINEERING &
ENVIRONMENTAL
SCIENCES

Core House, Pouladuff Road, Cork, T12 D773, Ireland
T: +353-21-4964133, F: +353-21-4464
Unit 16, J5 Plaza, North Park Business Park, Dublin 11, D11 PXT0, Ireland
T: +353-1-6583500, F: +353-1-6583501
W: www.fehilytimoney.ie E: info@ftco.ie



Legend

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

● Information signage on natural heritage to raise awareness

● 100m distance markers for outside path users to measure distance walked or jogged

■ Planting Mix 1: Areas of gorse, elder and Guelder rose

■ Planting Mix 2: Areas of shrubby willow, elder and hazel

■ Planting Mix 3: Areas of wildflower meadow, cut and removed 1-3 years

■ Undisturbed Area

Date 14/07/2016

Client Name
 Wicklow County Council

Project Title
 Waste Licence, Planning & EIS for Waste Soils Recovery Facility

Figure Title
 Proposed Landscaping Plan

Figure No. 3.9 Rev. A

Scale 1:2,500 @ A3



FEHILY TIMONEY & COMPANY CONSULTANTS IN ENGINEERING & ENVIRONMENTAL SCIENCES

Core House, Pouladuff Road, Cork, T12 D773, Ireland
 T: +353-21-4964133, F: +353-21-4464
 Unit 16, J5 Plaza, North Park Business Park, Dublin 11, D11 PXT0, Ireland
 T: +353-1-6583500, F: +353-1-6583501
 W: www.fehilytimoney.ie E: info@ftco.ie

3.3.8 Surfacewater Management during Construction & Post Construction

Drainage proposals addressing the construction and post construction phases are presented in detail in Section 13.

3.3.9 ESB powerlines

As identified, a 10Kv 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.

3.3.10 Proposed Site Infrastructure

Site infrastructure associated with the proposed development is described in the following in terms of the temporary construction phase and the permanent Pretty Bush Eco-park development.

Construction Phase Infrastructure

Access & Traffic control

Access to the site during the construction phase will be via the existing main entrance that will be widened through the removal of existing fence posts to facilitate delivery vehicle movements. A temporary, secure gated entrance will be installed upon widening. Further detail on vehicular movements and traffic control during the construction phase is presented in Section 9.

Site accommodation, shed & compounds

The existing area currently used as a maintenance depot will be used as a temporary site compound location during the construction phase. A portacabin structure or mobile welfare units will be installed to act as site office, canteen and welfare facility. A shipping container type structure will also be located in the compound for storage.

Site Security

An operators hut will be located adjacent to the entrance for the collection and recording of vehicle dockets during operational hours and this will ensure that there is no unauthorised access to the site during operating hours. Temporary fencing will be installed as a boundary for the site compound and the main site entrance gate shall be secured during non-operational hours.

Roads, paving, parking hardstanding

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

A temporary haul will be created during the site clearance phase, as previously described. This haul route will run from the main site entrance to the central staging area and shall be constructed of imported crushed rock or gravel. A typical haul road detail is shown in Figure 3.10.

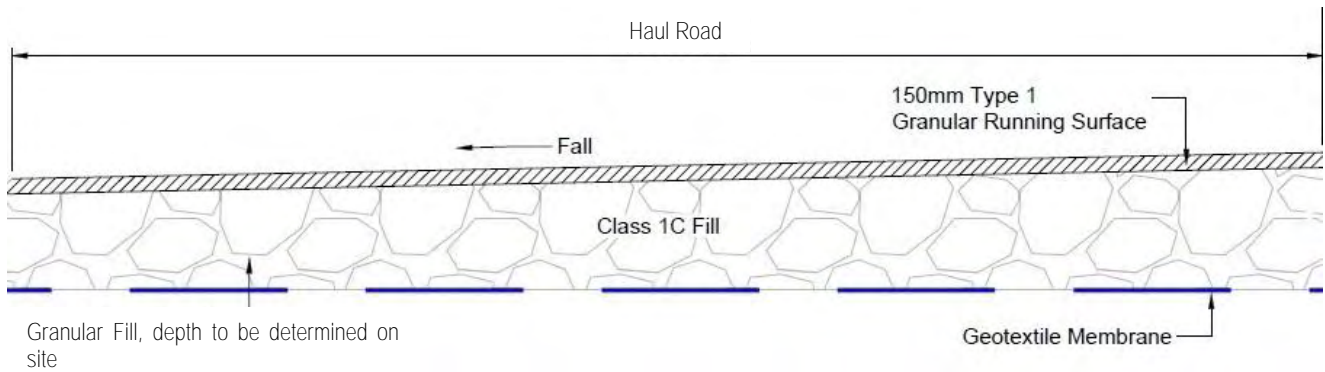


Figure 3-10: Typical haul road detail

Dry Wheel Clean

A dry wheel clean system will be deployed to ensure cleaning of vehicles prior to leaving site. This system is based on a vibratory action as a delivery truck drives over a metals grid, thereby knocking debris from vehicles wheels. Examples of dry wheel clean systems are shown in Figure 3-11.



(www.ecogreenplanthire.co.uk)

Figure 3-11: Dry Wheel Clean systems

In addition to the dry wheel clean system, a mobile road sweeper will be on constant operation at the site during the Construction Phase, to ensure that there is no impact from debris from haulage on the L1042 local road.

Fuel and oil storage

Small quantities of fuel for site clearance hand tools shall be stored in the storage container and any spillage of this fuel shall be dealt with using spill kits. A 1000L fuel storage tank shall be provided for this purpose within a designated area in the site compound and shall be fully bunded in accordance with the requirements of the facility waste licence i.e. to 110 % of the capacity of the storage tank and in accordance with best practice guidelines BPGCS005 (Oil Storage Guidelines).

Refuelling of site vehicles shall be undertaken at an identified location within the site compound and all refuelling shall take place at this location. The refuelling area shall be protected by bunding to contain any potential spillages during re-fuelling.

Foul water management

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.

Site services

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 (Eco-park) infrastructure

Access & Site Security

Access to the Pretty Bush Eco-park post construction shall primarily be via the upgraded site entrance, which incorporates a pedestrian entrance, as described in Section 3.3.5 and Section 9. The 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.

Roads, paving, parking hardstanding

Hardstanding and parking shall be as described in Section 3.3.5.

Traffic control

Post construction traffic measures are addressed in Section 9.

Foul water management

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

Site services

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.

3.4 Environmental Controls in accordance with Best Practice

3.4.1 Environmental Controls to be applied – Construction & Post Construction Phase

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.

An outline structure of the CEMP is included as Appendix 2 to this EIS. Mitigation measures presented in relevant sections of this EIS have been incorporated into this outline CEMP such that these mitigation measures form the basis of the CEMP.

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.

In terms of the development construction phasing, this will occur at the end of the site clearance works and the beginning of the materials acceptance phase and the requirements of this licence will apply until such time as the licence may be surrendered in agreement with the Agency.

3.4.2 Facility Waste Licence – Monitoring & Reporting

The data and information contained within the individual sections of this EIS will be used by the Agency in determining the requirements of any licence granted in respect of this proposed development. Measures presented herein are considered to apply the best available techniques (BAT) in relation to environmental management.

The facility licence will present requirements, which are typically in terms of:

- Management of the facility
- Infrastructure and operation
- Interpretation
- Emissions
- Control & monitoring
- Resource Use & Efficiency Response
- Accident Prevention & Emergency Response
- Closure, Restoration and Aftercare Management
- Notification, Records and Reports
- Financial Charges and Provisions

The licence will also stipulate monitoring requirements for different environmental media. Based on the studies and assessment carried out in the following section of this EIS, Table 3-3 presents the proposed monitoring frequency in relation to the proposed development while Figure 3-12 presents the proposed monitoring locations.

Table 3-3: Proposed Monitoring Frequency

Monitoring	Means	Location	Frequency
Incoming 'Greenfield material' –	Letter of Suitability	n/a	Every 5,000 tonnes of each material i.e. dredge spoil & topsoil
Dust Deposition	Bergerhoff	D1, D2	Quarterly during Construction Phase
Surfacewater	Grab sampling	SW1	Weekly & Quarterly (parameter dependent)
Groundwater	Grab sampling	GW1, GW, GW3	Quarterly
Noise	Meter reading	N1, N2, N3, N4	Quarterly during Construction Phase

Specific monitoring and reporting requirements identified by any licence granted will be incorporated into the CEMP by the appointed Contractor upon grant on same.

It is expected that any licence granted will require record keeping and reporting to the Agency as follows:

- Identification of commencement of activity
- Waste acceptance, releases and emission that do not comply with licence requirements
- Incidents and complaints
- Monitoring in accordance with licence requirements
- Waste delivery records

3.5 Description of Natural Resources Used

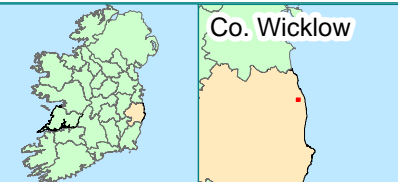
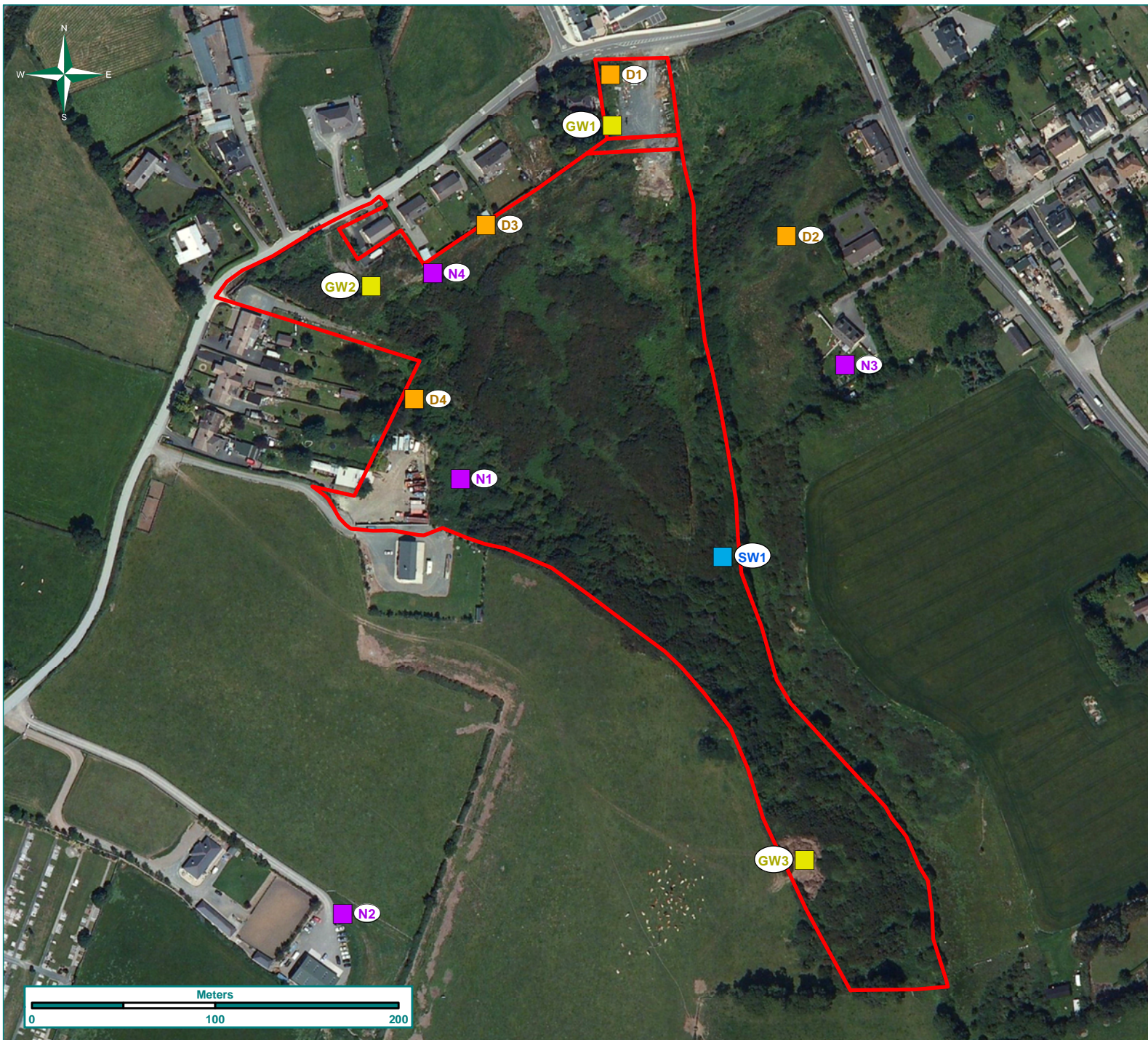
Natural resources consumption in relation to the proposed development will be limited to:

- fossil fuel consumption by plant and equipment during the construction phase
- importation of virgin materials for haul road construction, facility entrance and hardstanding construction
- resource consumption through electricity use during the construction phase (site offices) and post construction (lighting at site entrance)

Quantities and amounts of the identified resources to be consumed are estimated to be minor during both the construction and post-construction phase.

3.6 Regulatory Control

As identified, an application to the EPA for a waste soils recovery licence will be made in relation to this development in accordance with relevant regulations.



Legend

- Dust Monitoring Locations
- Noise Monitoring Locations
- Surfacewater Monitoring Location
- Groundwater Monitoring Points / Borehole Locations
- Study Boundary

Date 05/05/2016

Wicklow County Council

Name Of Job
Waste Licence, Planning & EIS for Waste Soils Recovery Facility

Title Of Figure
Proposed monitoring locations

Scale Used 1:3,000 @ A4

Figure No. 3.12	Rev A
--------------------	----------



CONSULTANTS IN
ENGINEERING &
ENVIRONMENTAL
SCIENCES

Core House, Rousehill Rd, Cork, Ireland.
T: +353-21-4964133, F: +353-21-4464
Unit 14 JB Plaza, North Park Business Park, Dublin 11, Ireland.
T: +353-1-6583050, F: +353-1-6583501

www.fehilytimoney.ie, E: info@ftco.ie

3.7 Decommissioning & Aftercare

Other facilities that may also be authorised as waste soils and recovery facilities may operate as such under a licence for a prolonged period of time until their available capacity is reached e.g. quarry sites being used for waste soils recovery activities. In these cases, there may be significant infrastructure that requires decommissioning upon completion of the filling activities and aftercare proposals may be extensive.

In this development proposal however, waste placement will be defined over a relatively fixed 12-24-month period i.e. the duration of the River Dargle Flood Defence Works and the aftercare proposals for the site form a central element of the development proposal i.e. the creation of an Eco-park. Decommissioning works will simply relate to the completion of the placement works and removal of construction related infrastructure while the aftercare will relate to the operation of the site as an Eco-park, with ongoing environmental monitoring in accordance with the requirement of the waste soils recovery licence.

An outline Decommissioning and Aftercare Management Plan will be submitted for consideration as part of the application process for the EPA waste soils and recovery licence.

3.8 Health & Safety

Design and construction related to the proposed development will be carried out in accordance with the:

- Safety, Health & Welfare at Work (Construction) Regulations 2013
- Safety, Health & Welfare at Work Act 2005
- Safety, Health & Welfare at Work (General Application) Regulations 2012
- Best practice guidelines.

A Project Supervisor for the Design Process (PDSP) has been appointed by WCC and the appointed Contractor for the site works will be appointed as Project Supervisor for the Construction Stage (PSCS), in accordance with the requirements of the Safety, Health & Welfare at Work (Construction) Regulations 2013.