

***NON-TECHNICAL SUMMARY  
OF THE  
ENVIRONMENTAL IMPACT  
STATEMENT  
FOR A  
WASTE TRANSFER STATION  
AT  
BALLINAGUN WEST,  
CREE,  
CO. CLARE***

**- An Environmental Impact Statement -**

**Volume II**

**NON-TECHNICAL SUMMARY**

**Date:** December 2008

A Submission by Bord na Móna Environmental Limited on behalf of  
Clean (Irl) Refuse & Recycling Ltd.

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## **1 INTRODUCTION**

This report presents the results of an Environmental Impact Assessment on an existing and proposed upgrade of a waste transfer station at Cree, Co. Clare. The proposed development will be located at the existing Clean (Irl) Refuse & Recycling Ltd site to accommodate an increase in annual tonnage intake, the introduction of new waste processing activities and the expansion of the site area.

Bord na Móna Technical Services was commissioned by Clean (Irl) Refuse & Recycling Ltd. to complete an Environmental Impact Statement to accompany a Waste Licence and subsequent Planning Application.

## **2 PROJECT DESCRIPTION**

### **2.1 Site Description**

The site for the proposed development is located in the town land of Ballinagun West, approximately 1.4km southwest of Cree, Co. Clare. The site occupies a total area of c.3.0ha. The site is wholly owned by Clean (Irl) Refuse & Recycling Ltd. The site is currently occupied by the existing waste processing buildings, which will not be altered as part of this development.

The site is located within a predominantly rural environment with agricultural lands and a number of residential properties located along the roadways. The entrance is located to the north of the site on the L-6108.

### **2.2 Project Description**

#### **Initial Development Phase**

In terms of the existing area of the site, the only increase to the site area under the proposed development will be an increase in area of c.0.4ha at the north of the facility thereby extending the site to the north only. The existing processing buildings and site infrastructure (ballistic separators, balers, conveyor belts) will not be impacted by the introduction of the new processes and development of the site. The most significant development of the site will be localised to the most southerly section of the site where it is proposed to build a biostabilisation plant/biofilter, and also a small plant for the burning of non-hazardous biomass to generate electricity for the site with potential to feed into the national grid. Extensions to the existing processing buildings, relocation of the glass bunkers, installation of diesel storage bunded unit, and the creation of End of Life Vehicle unit will be secondary in terms of the scale of the development.

It is envisaged that, due to the different aspects of the development, construction will take place at the site during approximately five phases following the planning process. The facility will remain operational during this time and works will be carried out at defined intervals. The site development works and construction sequence for the proposed development will, in general, comprise the following main steps. In turn such phases will generate construction traffic on a temporary basis:

- Stripping of field and overlaying with hardcore
- Construction of earthen berms skip storage area
- Hardstanding Phase 1 of skip storage area
- Construction of extensions to processing buildings
- Construction of glass bunkers
- Construction of End of Life Vehicle Unit
- Installation of wheel/truck/bin wash and leachate holding tank
- Excavation to accommodate installation of underground leachate holding tanks
- Construction of Biostabilisation Plant and Biofilter
- Construction of Biomass Recovery Plant
- Hardstanding Phase 2 of skip storage area
- Ongoing hardstanding of the hardcore areas

### **Operational Phases**

It is intended that the longevity of the facility is greater than 20 years. The development of the site will permit the continuation of existing waste processes which include:

- Dry recyclable processing
- Wet waste processing
- Baling of material
- Dropdown skip processing
- Timber shredding processing
- Construction and Demolition waste processing

The introduction of new waste processes/activities which will include:

- Biostabilisation (in-vessel tunnels in an aerated system)
- Provision to End of Life Vehicle unit
- Wheelie bin/truck wash
- Wheel wash
- Biomass recovery (electricity production)
- Skip storage

The facility has defined its proposed hours of operation below:

*Proposed hours of operation:*

7a.m. to 10p.m. Monday to Friday

7a.m. to 2p.m. Saturday

*Proposed hours of waste acceptance/handling:*

8a.m. to 8p.m. Monday to Friday

8a.m. to 1p.m. Saturday

*Proposed hours of any construction and development works::*

9a.m. to 6p.m. Monday to Friday

9a.m. to 1p.m. Saturday

*Biostabilisation*

Clean (Irl) Refuse & Recycling Ltd. is proposing to build and operate a state-of-the-art, totally enclosed facility to convert up to 15,000 tonnes per year of biodegradable materials found in the residential and commercial waste streams into fully stable and marketable soil amendment products. This facility will utilise proven, best available control technologies and best management practices for processing biodegradable waste materials, such as landscape materials, food, wood and non-recyclable paper, into valuable soil enhancing products while minimising any potential impacts to the environment or nuisances to neighbours. The process to be employed begins with the receiving of feedstock materials within an enclosed tipping area. Here materials are blended together to attain the proper balance of nutrients, moisture and porosity (air space within the mix) in order to optimise aerobic (in the presence of oxygen) microbial decomposition resulting in the production of water vapour, carbon dioxide and a humus like compost product. This is opposed to anaerobic (in the absence of oxygen)

microbial decomposition that commonly takes place deep within landfills and leads to the generation of methane and foul odours. Once blended, the feedstock materials are loaded into fully enclosed concrete tunnels. Aeration within the tunnels is controlled by computer to attain and maintain temperatures of 60-70°C. These temperatures kill all potentially harmful plant pathogens and animal diseases in accordance with the European and Irish Animal By-Products Regulations to protect human health and Ireland's robust livestock industry. After 10-14 days of in-vessel processing, the materials are unloaded from the tunnels and taken into a fully enclosed building where the materials are stabilised under aerobic conditions for another 6-8 weeks. After this curing period, the materials are screened to harvest the soil amendment compost product while the oversized undecomposed materials are returned to the beginning of the process and used as a bulking material in new batches of feedstocks.

Since the facility is totally enclosed, potential environmental impacts can be managed and controlled so that there will be negligible impact on the environment and nuisances can be minimised for surrounding neighbours and the community at large. All process and building air will be collected and treated to eliminate offensive odours and dust from migrating off site. Similarly any liquids generated in the tipping area or within the tunnels or curing areas will be collected and reused in the process. This eliminates any potential pollution of ground water or surface water sources under, on or near the facility. Noise is also limited as all activities will take place indoors. Finally, the enclosed nature of the facility restricts access to pests such as rodents, birds or insects so pest control measures within the facility can be effective in eliminating pest infestations or problems.

#### *Provision to End of Life Vehicle unit*

This process will involve depolluting the vehicle prior to disassembling the body of the vehicle. All parts will be recycled by incorporating the material into the existing segregation process at the facility. Independent bunding will be put in place for the storage of oil filters, engine oils, lead acid batteries and engine parts retaining grease or other hydrocarbons. Scrap metals will be removed to designated scrap metal area at the facility.

#### *Wheelie bin/truck wash*

A wheelie bin/truck wash area will be situated at the north east perimeter to with a leachate holding tank for washing of waste away from wheelie bins and trucks. The activity will be fully contained and will not have the potential to contaminate surface water on site.

#### *Wheel wash*

A wheel wash will be introduced to the site to ensure that no waste is transferred across the site hardstand surface or on external roads.

*Biomass recovery (electricity production)*

A small on-site biomass renewable energy generation system to produce all or part of the electricity and heat needed to operate the expanded Clean Ireland facility is proposed. The gasification system takes super clean and dry wood that the site is currently producing and converts it into a Hydrogen rich “syngas” that fuels an engine/generator. It simply substitutes a carbon neutral renewable energy system for the non-renewable diesel one currently being used on site.

*Skip storage*

The storage area will be placed in the extended area to the north of the site which is currently not within the site boundary. The area will be primarily used to store empty skips and will be hardstanded in the two phases. It is estimated that the area will be able to store up to 50 skips. Skip trucks entering the storage area will be infrequent and screening will be put in place to reduce the visual impact

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### 3 ENVIRONMENTAL IMPACT STATEMENT

The environmental impacts of the proposed extraction development are described within the Environmental Impact Statement under the following categories:

Human Beings	Flora and Fauna
Soil & Geology	Hydrology
Hydrogeology	Air
Noise	Traffic
Climatic Factors	Landscape
Cultural Heritage	Material Assets
Interactions of the above	

In order to assess the impacts of the development on the site and its environs, a series of field investigations and desk based studies were conducted by technical staff from Bord na Móna Technical Services from September 2008 to December 2008. These studies enabled an assessment of the environmental impacts, if any, that activities may have on the receiving water, soil, ecological and air environments.

#### 3.1 Human Beings

The existing Clean (Irl) Refuse & Recycling Ltd. site is located at Cree within the Kilrush rural area in County Clare, c.14km north of Kilrush and c.38km southeast of the town of Ennis. The site is situated within the Ballinagun West townland. The main access to the site is via a local road west (c.0.8km) off the R483 Kilrush to Quilty road. The proximity to the small village of Cree is c1.4km. The population of the surrounding area is consistent with the rural setting, with the area characterised by one off housing and ribbon development along the nearby roadways. There are 13 residences within 500 m of the site and a total of 22 houses located along the local road L-6108 on which the Clean (Irl) Refuse & Recycling Ltd. is sited off.

#### Impacts of the Proposed Development

##### *Noise*

A noise assessment was carried out at the facility and it concluded that the noise levels from on-site activities associated with the operational phase of the development will not significantly impact on the ambient noise levels from the surrounding areas, providing mitigation measures are put into place during the construction and operational phases. Screening by means of earthen berms, and the enclosure of waste activities and plant will reduce noise emissions from the site.

### *Traffic*

A traffic impact assessment was conducted in order to assess the potential impacts of traffic movements generated in relation to the proposed increase in tonnages. It is estimated there will be under a three fold increase in traffic movements from 88 to 222 per week of Clean (Irl) Refuse & Recycling waste vehicles only. This figure is exclusive of the traffic movements associated with employee private cars, which will account for a maximum of 50-60 movements per day or 275-330 per week. The proposed routes via the R484 and R483 to national roads are established waste collection routes. However, due to the nature of the business the traffic generated will be intermittent and the volume will be dependent on customer requirements. A number of mitigation measures were proposed to alleviate potential impact points.

### *Human Health*

A number of air pollutants have known or suspected harmful effects on human health and the environment. In many areas these pollutants are principally the products of combustion from space heating, power generation or from motor vehicle traffic. The air pollutants derived from the waste activities can be separated into traffic derived emissions, dust deposition, biofilter emissions and biomass recovery plant emissions. The presence of on-site vehicles will give rise to NO<sub>2</sub>, BTEX and SO<sub>2</sub> emissions. Good site practices will be implemented to minimise these emissions. All vehicles and machinery will be switched off when not in use to eliminate any unnecessary emissions. Dust minimisation measures will be implemented during the construction phase of the project in order to reduce the potential for the migration of dust from the site and from the construction traffic using public roads. Full enclosure of the composting process will ensure that the emission of bio-aerosols to the surrounding environment will be minimised and that the levels of this parameter will not have a significant impact on the surrounding environment. The biomass recovery plant will be state of the art using BAT to ensure reduction of potential air pollutants.

### *Site Structure / Land Use*

Land use in the vicinity of the project site is predominately agricultural with a number of residences located along the nearby roadways. The proposed C&D waste storage building, timber storage building will be constructed such that the apex of these proposed sheds will either be at a lower height or inline with the existing structures. The maximum height of the biostabilisation plant will be at 1.2m above the highest existing processing buildings. The flue of the biomass recovery plant may cause a visual impact, however mitigation measures will be put in place to reduce the visual intrusion of the development. The proposed skip storage area will have earthen berms created to conceal skips that may be stored at this area. Existing railway sleepers at the east perimeter and earthen berms at the west perimeter have been constructed in such a manner as create minimum visual intrusion on the existing

residents and road users, which would reduce long-term visual impacts. Landscaping at the southern and eastern berm contribute to the visual aspects of the site.

### *Socio-Economic*

The development has, although limited, varied social and economic effects. These effects may be categorised as follows:

- **Primary Socio-Economic Effects:** It is considered likely that the operational phase of the development has and will have minimal impacts on the existing population structure of the area. The job creation benefits are secondary to the development, as it is the service provided by the company to the extended region that benefits the local and regional customers in terms of a contribution to waste management policy. The continuation of the facility will serve to retain the jobs currently associated with the facility and will involve the recruitment of two permanent operators for the operation of the Biostabilisation Plant.
- Service required (electricity, telecommunications, etc.) for the development will be obtained through existing service lines and introduction of the biomass recovery plant to generate electricity for the operation of the site.

## **3.2 Flora & Fauna**

A?? How many baseline surveys were undertaken by Bord na Móna Technical Services during the summer of 2008.

The site is not designated as a Natural Heritage Area or a Special Protection Area under the Birds Directive (79/409/EEC) or as a Special Area of Conservation in accordance with the Habitats Directive (92/43/EEC) nor is it designated under any of the other nature conservation designations currently used. No species on the list of the Flora Protection Order 1999 or rare species lists of the Red Data Book were found at the site. The main habitats occurring within the site area are detailed below, with their classifications (according to the Heritage Council) in parentheses.

- (i) Hedgerows (WL1)
- (ii) Earth Banks (BL2)
- (iii) Drainage Ditches (FW4)
- (iv) Buildings and Artificial Surfaces (BL3)
- (v) Refuse and Other Waste (ED5)

Other habitats occurring within the vicinity, but not directly associated with the site include:

- (vi) Conifer Plantation (WD4)
- (vii) Marsh (WS1)
- (viii) Treelines (WL2)
- (ix) Scrub (WS1)
- (x) Broadleaf Woodland (WD1)
- (xi) Wet Grassland (GS4)
- (xii) Stonewalls and Other Stonework (BL2)

The surrounding land is a mixture of one-off housing and fields; with hedgerows, chain & link fencing or low-rise stone walls defining land and property boundaries. The dominant habitat identified at the site is the artificial surface in terms of the greatest area however, the habitat with the greatest variety of wild flowers and grasses, was the Earth Banks or 'earthen berms' which define sections of the boundary for the site. The area for the expansion of the site, where it is proposed to be a hardstanded skip storage area, is located on an agricultural well drained field which is common to the immediate surrounding area at the north of the local roadway. This piece of land is currently soil stripped, with existing habitats in the hedgerows at the east and north remaining unaffected. Earthen berms have been introduced for screening and boundary purposes and will eventually be colonised with species typical throughout the Irish countryside. None of the plant species or habitats recorded are rare or endangered.

### **Impacts of the Proposed Development**

The level of risk of the existing and proposed operations having any significant impact on either the pNHA at White Strand Carrowmore Marsh which lies c.3km west of the proposed site, or the designated SAC of Carrowmore Dunes (SAC 002550) which is the closest designated area to the site, is low. Existing berms will remain in place and there will be no significant impact on the established habitats at the boundary Earth Banks. There will be no alteration to the Hedgerows at the boundary sections and the habitat will therefore be conserved.

### **Mitigation Measures**

The development of the area will not encroach or impact upon the drainage ditch or hedgerow at the east of the proposed area. The Earthen berms created and planted with native tree and shrub species will be maintained. Existing landscaping around the boundary of the facility shall be maintained through regular inspection and replacement planting of species or individual plants that may die off.

The habitats encountered on the site and its environs are widespread and very typical throughout the Irish countryside and none of the habitats were recorded as having high conservation value.

### 3.3 Soil & Geology

The study area is underlain by Gley Soils and Quaternary Glacial Till. The Gley soils have developed due to the low permeability characteristics of the glacial till. The quality of the soil is generally clean and is indicative of Irish Soils. The glacial till is known to be >1.9 m in thickness and is described as mottled brown clay with clasts (Namurian rocks). The permeability characteristics are poor. The bedrock geology underlying the site is identified as Namurian Sandstones which consist of siltstones and sandstones.

#### Impacts of the Proposed Development

Due to the nature of the waste activities on site, there is the potential for the discharge of potential polluting substances into the subsurface such as leachate from waste handled on site and hydrocarbons from vehicles and fuel storage. Mitigation measures and best practice operations ensure there is no negative impact on the underlying subsurface. The site is covered with hardstanding to protect the underlying subsurface.

#### Mitigation Measures

All potentially polluting substances are stored and handled in designated areas on site. These designated areas (fuel storage area/waste acceptance area) are bunded and designed to contain any of the substances therein. A leachate collection system on site diverts any leachate into a holding tank where it is collected for treatment in the Local Authority wastewater treatment plant. Spillage kits will be located throughout the facility in case of an unforeseen spillage/leakage of potential polluting substances. All equipment on-site is serviced regularly. The facility will operate under a waste licence with conditions in place to protect the underlying subsurface.

### 3.4 Hydrology

The proposed site is located within the River Creegh sub-catchment, which is in turn located within the Mal Bay hydrometric area (hydrometric area no. 28). The hydrometric area is described as the surface catchment drained by all streams entering tidal water in Malbay between George's Head and Black Head, Co. Clare. There is no direct discharge into a river or stream from the facility. There are however two outfalls from the site discharge surface water into field ditch drains, which ultimately drain into the River Creegh.

As part of this study, a desk based assessment of the River Creegh was carried out using information gathered from the Environmental Protection Agency and Clare County Council. The quality of the surface water network around the site was examined. Two monitoring locations on the River Creegh are used by both the EPA and Clare County Council. Biological monitoring has been undertaken at Creegh Bridge and Mountrivers Bridge and the results of the river indicate that the river is generally classified as being slightly polluted.

The surface water quality results for the discharge from the site indicate that the quality of the water within the vicinity of the site is, in general, not impacting on the quality of the River Cree.

### **Potential Impacts of the Proposed Development**

There is potential for release of pollutants to surface waters from the following identified sources:

- Leachate generation from contact of water with waste
- Surface covering and drainage design impacts the quality of surface water draining across the site
- Handling and storage of raw materials where the potential exists for uncontrolled discharge of materials such as fuels, lubricants and hydraulic fluids to both ground and surface water. Fuel dispensing is undertaken in a controlled, paved, bunded environment, where there are drip trays and spill kits available

### **Mitigation Measures**

Leachate will be generated in the reception hall and curing area of the Biostabilisation Plant. All leachate within the Biostabilisation building will be self-contained due to the proposed design of the floor area and building. Two underground leachate tanks will have a capacity such that all leachate generated from the floor area may be stored. Wheel wash, wheelie bin/truck wash will be carried out in designated areas where all leachate will be contained and removed off site for disposal with an approved waste contractor. Glass, Timber and C&D waste will be stored indoors. Baled waste will be stored indoors.

The hardstanded areas will be extended to cover the entire site and surface water discharged from the facility will be passed through an oil/silt interceptor

All hydrocarbons and hazardous waste from the depollution of End of Life Vehicles will be in designated bunds, quarantine items will be indoors and in designated containers.

### 3.5 Hydrogeology

Groundwater recharge in the study area is through diffuse sources (ie. rainfall), with recharge estimated at c. 200 – 2500 mm/yr. There were no karst features identified in the area. According to the Geological Survey of Ireland (GSI), the aquifer classification is given as locally important bedrock aquifer which is generally moderately productive only in local zones. Groundwater quality beneath the site is generally clean and free from contamination. Groundwater is used at the facility and local as a means of domestic water supply as there is no mains water servicing the area. It is assumed that houses have individual private wells for domestic usage or avail of the Drumehilly Group water Scheme. Groundwater vulnerability is classified by the GSI as high to extreme. The site is covered by hardstanding areas which provide protection to the underlying groundwaters.

Groundwater abstractions on site are minimal and are considered similar to that of a small farm and domestic residences, water requirements for the composting process and biomass recovery plant will be met for the most part by harvesting roof water in three 30m<sup>3</sup> tankers located adjacent to this plant. These low abstraction rates will not be significantly increased and are not considered to have a negative impact on the underlying aquifer.

Treated domestic effluent from the wastewater treatment plant on site is discharged to groundwaters via a percolation area. A site suitability assessment was carried out on-site and ongoing monitoring of the treated effluent indicated that this discharge should not have a significant impact on the underlying groundwaters.

#### Potential Impacts of the Proposed Development

Due to the nature of the waste activities on site, there is the potential for the discharge of potential polluting substances into the groundwaters such as leachate from waste handled on site and hydrocarbons from vehicles and fuel storage. Mitigation measures and best practice operations ensure there is no negative impact on the underlying groundwaters.

#### Mitigation Measures

All potentially polluting substances are stored and handled in designated areas on site. These designated areas (fuel storage area/waste acceptance area) are bunded and designed to contain any of the substances therein. A leachate collection system on site diverts any leachate into a holding tank where it is collected for treatment in the Local Authority wastewater treatment plant. Spillage kits will be located throughout the facility in the case of an unforeseen spillage/leakage of potential polluting substances. All equipment on site is serviced regularly. A surface water drainage system directs run-off from the yard area through a siltation trap and oil interceptor for discharge off site. The facility will operate under a waste licence with conditions in place to protect the underlying subsurface.

### 3.6 Air

To determine the baseline air quality and subsequently assess the impact of the development the following approach was taken:

- Identification of the potential pollutants
- Monitoring of pollutants to assess the current air quality levels
- Discussion of the potential impact to air quality during the operational phases of the development
- Mitigation measures to minimise these potential impacts.

#### Potential Impact of the Proposed Development

Examination of both the existing and proposed processes indicates that a number of potential pollutants may be produced at significant levels to have an impact on the existing air quality. The identified pollutants include:

- Particulates ( Dust Deposition)
- Incomplete combustion products
- Traffic derived pollutants
- Odour
- Bio aerosols

#### Mitigation Measures

Dust minimisation measures will be implemented during the construction phase of the project in order to reduce the potential for the migration of dust from the site and from the construction traffic using public roads.

The presence of on-site vehicles will give rise to NO<sub>2</sub>, BTEX and SO<sub>2</sub> emissions. Good site practices will be implemented to minimise these emissions. All vehicles and machinery will be switched off when not in use to eliminate any unnecessary emissions.

The operation of the biomass recovery plant will be in line with BAT requirements. The plant itself will be a new previously unused piece of equipment that will operate to the highest technical specifications. The raw material feed stock for the operation of this unit will only consist of wood chip, paper and cardboard and will therefore not come in under the requirements of the Waste Incineration Directive. As the plant will be new, it will comply with the BAT emission requirements for this type of gasification process. Therefore, the potential impact of this unit will be minimal.

Full enclosure of the composting process will ensure that the emission of bio-aerosols to the surrounding environment will be minimised and that the levels of this parameter will not have a significant impact on the surrounding environment.

All activities that have a high potential for odour generation such as feedstock blending, tunnel loading/unloading, composting, curing, turning of curing piles and screening will be carried out within the proposed building or enclosed composting system to ensure capture and treatment of any odours produced.

### 3.7 Noise

A survey of baseline noise levels at the site of the waste transfer station of Clean (Irl) Refuse & Recycling Ltd. has been conducted during 2007 and 2008 by Bord na Móna Technical Services, to determine current noise levels at the site perimeters and at noise sensitive locations situated close to the facility.

#### Potential Impacts of the Proposed development

All operations at the development may give rise to potential impact on the existing noise environment.

Noise levels recorded during the operation of the facility show that noise levels are in compliance with the 55dBA  $L_{eq}$  daytime value at the noise sensitive location. The majority of the boundary locations are also within the limit. The screening berms around the boundary of the site will also act to reduce the noise impact further. In addition the presence of the proposed Biostabilisation Plant will act as a buffer for noise emitted from the south of the site. Construction noise will be intermittent and best practices will be employed to mitigate any increase in noise levels from the facility.

#### Mitigation Measures

The control of on-site activities through the implementation of good management practices will combine to ensure that the noise generated at the site will not have any undesirable effects on the existing neighbouring environment. Measures such as cladding of the trommel may be required to reduce plant noise. The movement of plant at C&D waste storage area and feeding into conveyor belt will be enclosed along with the proposed enclosure of the timber shredder.

All processing equipment associated with the Biostabilisation Plant including shredders, mixers, front-end loaders and screens will be operated within enclosed buildings during defined working hours each day, thus reducing any noise from these sources. The engine associated with the biomass recovery plant will have noise reducers in line with BAT.

### 3.8 Traffic

A Traffic Impact Assessment was carried out to examine the potential impacts on the existing road networks of the traffic generated as a result of the proposed upgrade at Clean (Ireland) Refuse & Recycling Ltd.

Existing access into the site is through a gated entrance at the north of the site *via* the weighbridge only. The location of the main entrance to the facility will not be altered under the proposed upgrade of the facility. It is envisaged that the proposed skip storage area at the north of the site will be accessed through the existing car park. The design of the existing site access ensures that vehicles entering the site do not impede the traffic flow on the public road.

#### Impacts of the Proposed Development

The construction techniques will directly correlate with the type of traffic that will be required to complete the upgrade of the site. Several different types of construction vehicles will have to be brought on site. Processing buildings to be constructed will be prefabricated in sections and will arrive by HGV to site where they are assembled *insitu* using a crane which will also have to be transported to the site. Traffic levels associated with the proposed infrastructure upgrade will result in a significant but temporary impact to traffic in the locality.

The current number of Clean (Irl) Refuse & Recycling Ltd household customers is approximately 18,000, and with the proposed development of the site the company aims to increase the customer base (household) to 30,000. The existing collection routes will continue to be used, and extra routes may be added to the collection schedule depending on the need for the bin collection service in the area. Traffic movements will increase with the rise in tonnages. The greatest increase is related to C&D waste, which shows over a 300% increase in movements.

#### Mitigation Measures

To minimise traffic disruption, waste trucks will not pass through Kilmihill outside peak hours (i.e. 7am-9am and 4pm to 6 pm.) and National roads will be used as traffic routes as alternatives to local roads. Brown bin waste collection will be centralised at an alternative depot to reduce the number of traffic movements to the site in Cree.

Construction traffic will be infrequent over a long duration of time and existing lay-bys on the L-6108 will continue to serve the public vehicles.

### 3.9 Climatic Factors

The closest synoptic station is Shannon synoptic station located east of the Creegh site (c.37km). Data for this station has been used as it is more likely to represent climate conditions at the Cree site due to its proximity to the coast.

The climate of the development site is characterised as follows:

- The prevailing wind direction over Ireland is from the south and west, and this is likely to be the case at the site.
- The strongest winds for the Cree site occur during the period from October to March
- The strongest winds for the Cree site (greater than 10knots / 5.15m/s) occur during the period from October to March (excluding November)
- Air temperature ranges from a mean monthly temperature of 5.4°C in January to 15.7°C in July

The development is not energy intensive and does not result in large scale emissions to the atmosphere. The use of natural lighting, energy efficient lights and ventilation equipment will minimise the energy requirements and hence the impact on the climate. It is not considered that the development has any impact on the climate in this area.

### 3.10 Landscape and Visual Impacts

The site is situated in a rural setting in west Clare where the immediate surrounding landscape is dominated by flat green fields intermingling with gently rolling hills. There are no landscape sensitive areas, designated routes, designated views or areas protected for nature in the immediate vicinity of the site. The recreational areas in the vicinity of the site are mainly beaches and small coastal villages, with White Strand beach being the closest recreational area at approximately 5km from the site in Cree.

### Potential Impact of the Development

The proposed site will have a long term impact as it is intended that the facility will operate for a further twenty to fifty years. The expansion of the site is considered to be a visual intrusion rather than an obstruction, as the proposed development will be an addition to the existing intrusion on the landscape thereby, impinging on the existing view without obscuring it. The development will give rise to visual intrusion for the private dwellings on the local road, however it is contended that visibility is limited due to natural cover and intermingling drumlins.

## Mitigation Measures

The visual impact will be minimised through the appropriate mitigation measures follows:

- Existing berms, hedgerows and landscaping at the east and south perimeter will be maintained
- Buildings will be constructed to be uniform with existing buildings and will reflect typical agricultural structures in the area
- The biomass recovery stack will be painted to blend in with the proposed structures, and where the height of the stack rises above the highest apex of the proposed buildings, the colour of the stack will be such that it will correspond with the natural skyline
- Southern boundary will be fully stabilised and planted following construction works

### 3.11 Cultural Heritage

An archaeological assessment of the Clean (Irl) Refuse & Recycling Ltd. site and its environs was undertaken by archaeologist Annette Quinn of Tobar Archaeological Services at the request of Bord na Mona Technical Services in May 2005, in conjunction with a planning application relating to buildings at the site.

This assessment examined the archaeological heritage of the development area in order to identify any known or potential archaeological constraints. It also assesses any likely impacts on any known or potential features of archaeological importance and offers recommendations for the mitigation measures to be taken.

The archaeology assessment did not indicate any archaeological features in the development area. The development will not physically affect any recorded monument listed within the Record of Monuments and Places (RMP). No surface features of an archaeological nature were identified. There are no Monuments listed in the RMP within the development site.

The nearest recorded monument (in excess of 100m of the proposed site) (RMPCL047-050) is located west of the proposed site in the townland of Ballinagun West. The monument consists of a substantial earthen enclosure which is situated immediately south of the existing public roadway.

Cree Bridge (RPA 198) is listed as a protected bridge under the CDP 2005-2011 and is described as a three arched road bridge (c.1820) over a river. There are no other listed architectural features in the vicinity of the Clean (Irl) Refuse & Recycling site.

## **Potential Impacts of Quarry Development**

By their very nature, developments of this kind are likely to have an impact on their environs. Topsoil stripping, ground reductions and general landscaping works have the potential of revealing hitherto unknown sites, features and artefacts of archaeological potential and interest. Furthermore, extant remains, whether or not previously identified and recorded, also have the ability to be damaged or destroyed. There are no recommended mitigation measures arising from the archaeological study of the site.

### **3.12 MATERIAL ASSETS**

It is contended that the material asset values of the surrounding area will not be significantly affected by the development as the environmental impacts (air, noise and water pollution, visual intrusion, traffic impacts) of the activity are shown to be minimal.

The development is in character with activities currently being undertaken at the site.

## **4.0 CONCLUSIONS**

In summary, it is contended that the negative impacts of the development of the waste transfer station at Cree, Clare can be minimised or eliminated by adherence to the mitigation measures. The Environmental Impact Statement, therefore, shows that no significant adverse effect on the environment should occur as a result of this development.

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