



BALLYGUYROE RESIDUAL WASTE LANDFILL

ENVIRONMENTAL IMPACT STATEMENT

VOLUME 1 OF 3

NON-TECHNICAL SUMMARY

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Abstract: Greenstar Ltd proposes to develop a landfill at its licensed site at Ballyguyroe. This document comprises a non-technical summary of an environmental impact statement that has been prepared in support of the planning application being made to Cork County Council

TABLE OF CONTENTS

	<u>Page</u>
1. INTRODUCTION	1
1.1. THE APPLICANT AND PROJECT	1
1.2. THE SITE	1
1.3. PROJECT DESCRIPTION.....	1
1.4. NEED FOR THE DEVELOPMENT	4
1.5. SITE SELECTION	5
2. IMPACTS AND MITIGATION.....	6
2.1. HUMAN BEINGS.....	6
2.2. AIR QUALITY	8
2.3. SOILS & GEOLOGY	9
2.4. WATER QUALITY, HYDROLOGY & HYDROGEOLOGY	9
2.5. ECOLOGY	10
2.6. LANDSCAPE	11
2.7. CULTURAL HERITAGE AND ARCHAEOLOGY	12
2.8. LAND USE AND MATERIAL ASSETS	12
3. INTERACTION OF THE ABOVE	14
3.1. NEGATIVE CUMULATIVE EFFECTS	14
3.2. POSITIVE CUMULATIVE EFFECTS	14

TABLE OF FIGURES

	<u>PAGE</u>
FIGURE 1: SITE LOCATION MAP	2
FIGURE 2: SITE LAYOUT PLAN	3

1. INTRODUCTION

1.1. The Applicant and Project

Greenstar Ltd. (Greenstar) is the applicant. Greenstar currently provides a range of waste management services throughout the country. Operations include waste recovery facilities in counties Cork, Limerick, Tipperary and Waterford.

Greenstar proposes to develop and operate a state-of-the-art landfill facility for the disposal of treated, residual waste at Ballyguyroe, Mallow, Co. Cork. The facility has been designed and is licensed to accept 145,000 tonnes per annum of treated residual waste.

Environmental impact statements were prepared in association with two previous planning applications for the site, most recently in 2003. This EIS is an update of that document submitted to Cork County Council in October 2003.

The waste licence (W0157-01¹) was issued for the facility in November 2004.

This EIS for the proposed development will accompany a revised planning application to Cork County Council.

1.2. The Site

The site is located close to the close to the Cork/Limerick county boundary, approximately 5 km northwest of the village of Kildorrery (See Figure 1 – Site Location Map).

The 28.3 hectare (70 acres) site is bounded to the north by a closed Cork County Council municipal landfill site, to the west by commercial forestry plantations, to the east by the Farahy River and to the south by rough pasture.

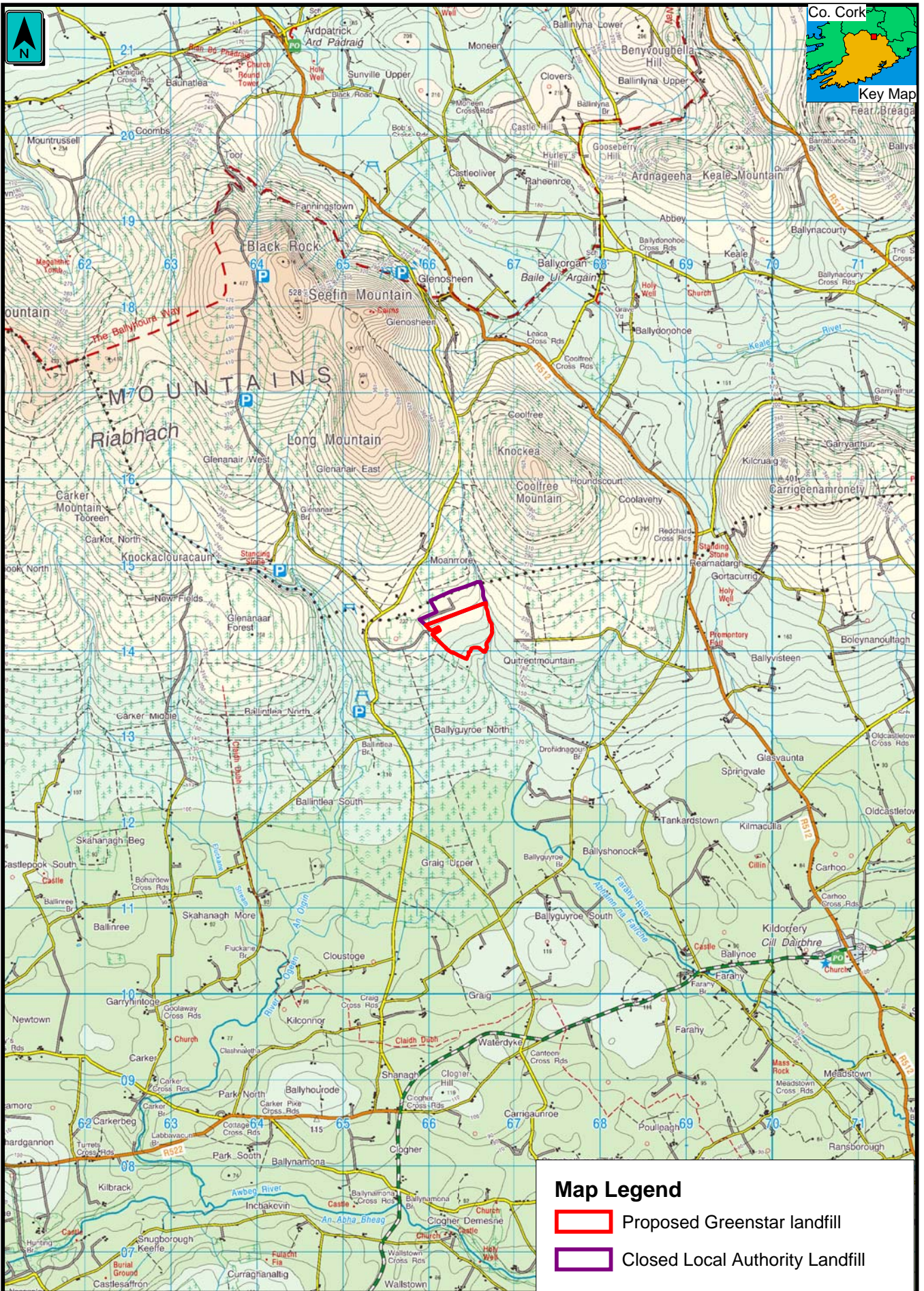
1.3. Project Description

The facility (as shown on Figure 2) will comprise an engineered, residual waste landfill and ancillary infrastructure including:

- roads, weighbridges, wheel wash
- offices and car park
- leachate lagoon and surface water retention pond
- waste inspection/quarantine areas
- mechanical and electrical services including a gas flare
- a range of environmental control/monitoring measures

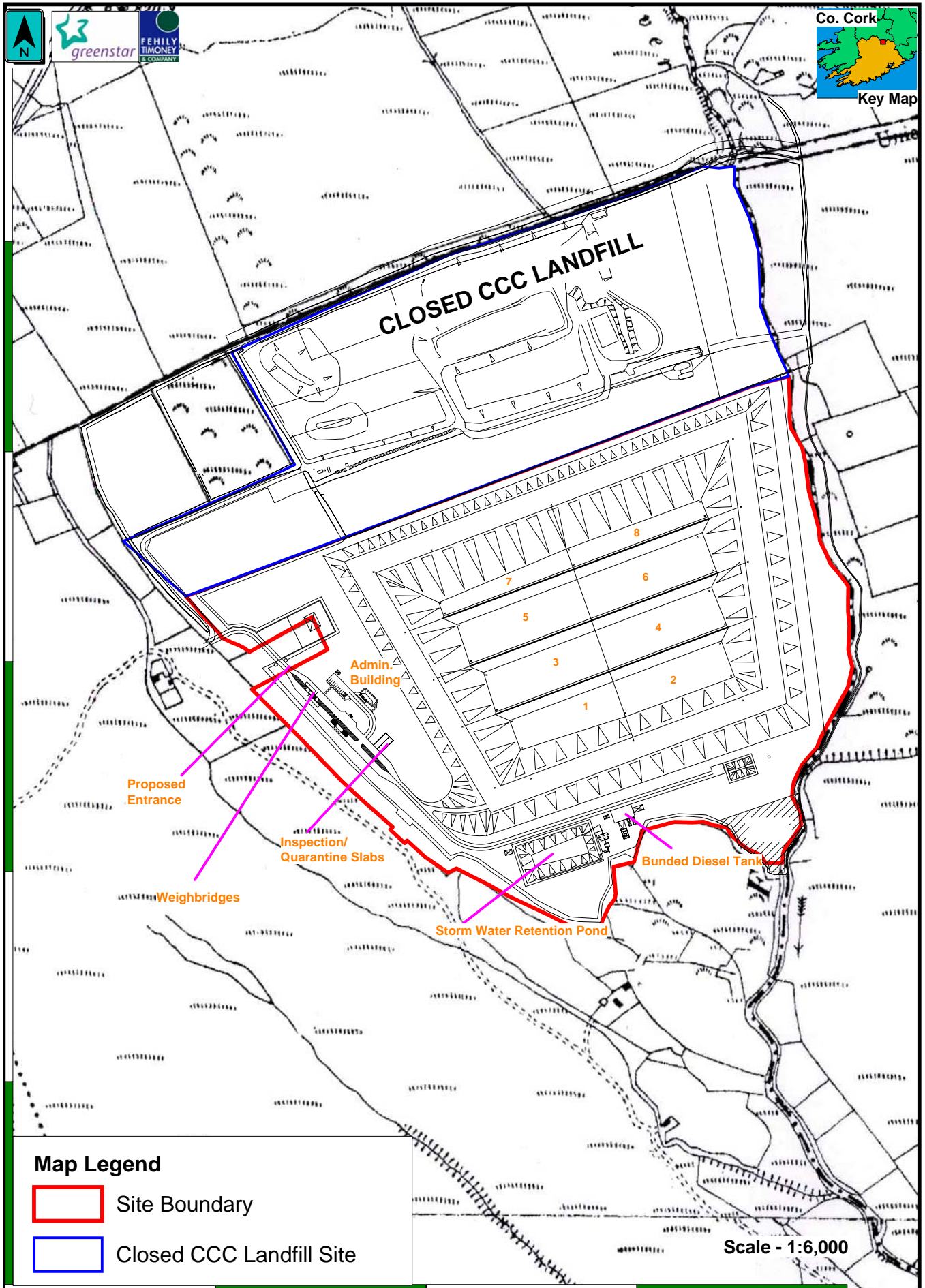
¹ W0157-01 is available for viewing/download on www.epa.ie

Figure 1: Site Location Map



Site Location Map

Figure 2: Site layout plan



The site will have palisade or similar fencing at the entrance and chain link fencing around the remainder of the boundary. Closed circuit TV will be installed at critical points. All trucks entering and leaving will pass over a weighbridge.

The administration block will accommodate offices, canteen, reception and toilets. The weighbridge will have a separate office.

A small scale sewerage treatment facility (Bio-cycle or equivalent) will be installed at the site to cater for toilet and canteen waste water, with effluent discharging to the leachate lagoon.

The waste will be deposited in eight cells, lined in accordance both with the standards set down in the EU Landfill Directive² and in the EPA licence. The landfill footprint will cover approximately 11 hectares (27 acres).

Deposited waste will be compacted and covered daily to mitigate against potential effects of wind blown litter and other nuisances. If necessary, bird control will be achieved by the use of trained birds of prey controlled by a specialist handler, combined with other deterrents such as kites and balloons.

Leachate (the contaminated water that occurs when rainfall seeps through waste) will be collected at the base of the cell and will be pumped to a leachate lagoon and eventually tankered from the site for treatment and disposal at an approved facility. The depth of leachate within each cell will be controlled as per the licence requirements.

An active venting system will be installed to collect and flare the combustible landfill gas initially. When sufficient quantities are available the gas will be utilised to generate power.

Surface water will be directed to a holding pond prior to discharge to the River Farahy.

On closure, the landfill will be capped and vegetated to match the surrounding landscape in accordance with Condition 4 (Restoration and Aftercare) of the waste licence for the facility.

1.4. Need for the Development

Greenstar currently operates a range of waste management services throughout Munster including recovery facilities in counties Cork, Limerick, Tipperary and Waterford. To retain this level of service Greenstar is reliant on the establishment of an engineered, residual landfill in Munster. In addition, residual waste from other recovery facilities such as those owned by third parties in Munster will also be accepted at the facility.

Even with the sustained increase in the diversion of waste from landfill there remains a need to develop landfill capacity. Based on analysis of existing and proposed licensed landfill capacity, Greenstar predicts that there will be a capacity shortfall in the short to medium term of engineered sites suitable for acceptance of residual waste generated within Munster.

² Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste

The proposed landfill at Ballyguyroe is fully licensed by the EPA with a design that incorporates very high standards of environmental protection and is well positioned to provide medium term capacity for residual waste arising in Munster generally and in County Cork in particular. The provision of state-of-the-art, engineered landfill capacity as proposed at Ballyguyroe accords with national waste policy set out in documentation such as 'Changing Our Ways'³ (1998) and 'Waste Management - Taking Stock and Moving Forward' (2004)⁴.

1.5. Site Selection

The site is located on the border of counties Cork and Limerick and is situated adjacent to a closed municipal landfill site previously operated by Cork County Council from 1990 to 2001. In a Munster-wide context the site remains a favoured site for landfill development on the basis of a 1993 site selection exercise and based upon extensive environmental impact assessment carried out to date as part of this application and as part of the waste licence application process. The suitability of the site and proposed design in terms of environmental protection was considered by the EPA in determining to grant a waste licence for the facility.

³ Changing our ways, Noel Dempsy TD DOELG September 1998

⁴ Waste Management – Taking Stock and Moving Forward DOEGL April 2004

2. IMPACTS AND MITIGATION

2.1. Human Beings

The main potential impacts on human beings in the vicinity of a landfill are from contamination of surface and groundwater, sub-surface migration of landfill gas, odour, dust, litter and vermin.

There are eleven houses within 1 km of the landfill. The waste footprint will be no closer than 500 m from any dwelling. This is consistent with EPA guidance for landfills⁵ (minimum distance 250 m).

Environmental control measures proposed in the design and conditioned in the waste licence address odour, dust, noise, emissions to ground and surface water and vermin on site. These measures will be intensified if and where necessary.

Apart from forestry and farming there is no commercial activity located within the immediate vicinity of the site. The site adjoins a (closed) Cork County Council landfill site. The nearest village is Kildorrery, approximately 4.5 km to the south east of the site.

Areas covered on this section of this report include:

- Noise
- Traffic
- Health & Safety

Other potential impacts, for example air quality and visual impacts are described in other sections of this report.

2.1.1. Noise

The main source of noise during construction and operation of the site will be traffic and operational plant.

The increase in noise at the nearest dwelling has been calculated at between 1 and 2 dB(A). This level of increase will be barely perceptible and is not considered to be significant. The increase in noise will not exceed the limit set by the waste licence.

During the construction of the site, working hours will be restricted. As excavations go below ground level natural attenuation due to below ground level, workings and associated earth embankments around the excavations will mean that noise levels will be significantly reduced. Contractors on site will be required to maintain all machinery in good working conditions and machinery will not be left idle during the work.

⁵ EPA Landfill Manuals – Manual on Site Selection- (2nd Draft) September 1996

During the operational phase of the landfill, all equipment used on site will be regularly serviced and maintained in good working order. The filling sequence of the landfill site will start at the southern end of the facility and will move northwards as additional phases are developed. The nearest dwellings to the site are located at the north and it is proposed that during the initial stages of filling a berm will be constructed along the northern boundary of the site. This will have the effect of visual screening and also acoustic screening of operations at the site. In addition, a vehicle speed limit will be implemented along the access road to mitigate excessive noise levels from passing vehicles.

2.1.2. Traffic

There are three main access routes to the site. These are:

- The National Primary Road N8, which connects the National Secondary Road N73 at Mitchelstown, providing a link towards the site via the local or county road (L1329) running north from a junction near Clogher Cross Roads. This route would handle traffic from the east and south of the site.
- From Fermoy there is a shorter route to the N73 at Kildorrery via the R521. This would handle the traffic from areas north-east of the site.
- The National Primary Road N20, which connections the National Secondary Road N72/N73 providing a link to the site via the Clogher Cross Roads and the local road (L1329). This would handle the traffic from the west and Mallow area.

The potential impact of the proposed development on traffic and roads is summarised below:

- Increased traffic during the construction period initially and periodically thereafter as later phases of the landfill site are developed
- Increased HGV traffic associated with incoming waste and transport of leachate off site
- The occurrence of latter construction phases during the operational phase

Waste trucks will generate 52 movements per day (i.e. 26 each way). Leachate disposal will add 10 movements. Miscellaneous deliveries will add two movements. There will be a significant increase in traffic on the L1329 and improvements are envisaged.

With respect to mitigation, The L1329/N73 junction is scheduled for upgrade by Cork County Council. Minor improvements will be necessary to widen the pavement of the L1329 at a few locations between the site and the N73, however in general the N73 which runs south of the site and the local access road L1329 which serves the site are wide enough to accommodate HGV traffic. The number of passing opportunities will be improved along the L1329. The site access road to the L1329 will be upgraded to ensure that the existing informal passing bays are surfaced and properly signed at agreed locations.

Only hauliers under contract to Greenstar will deliver waste to the site and any hauliers disobeying restrictions with regard to speed etc. will be deemed in breach of contract and appropriate action will be taken by Greenstar.

2.1.3. Health and Safety

Uncontrolled and irresponsible waste management practices could give rise to health and safety concerns. Landfill in particular has the potential attract birds, flies and vermin that could, if uncontrolled spread disease.

Landfill gas is an inevitable consequence of landfilling. Landfill gas is explosive and is an asphyxiant. Without proper control gas could build up and migrate to the detriment of safety and health.

Uncontrolled dust and aerosols have the potential to carry disease and to give rise to reduced visibility.

The standards set down in the licence and in the Landfill Directive are there to protect all aspects of the environment. Adherence to the standards is central to Greenstar's objectives.

The environmental performance of the site will be monitored both by Greenstar and by the EPA. A natural consequence of protection of the environment and adherence to the licence conditions is protection of health and safety.

2.2. Air Quality

Air quality in the existing environment is at an acceptable level in the vicinity of the proposed site. The existing closed facility has the potential to cause odour but the existence of a gas flare mitigates the risk.

Landfills generate landfill gas over time comprising carbon dioxide and methane which are greenhouse gases together with other trace elements. It is generally accepted that these gases contribute to global warming and climate change, however the potential impact of emissions from Ballyguyroe Residual Landfill on the local climate will be minimal due to the small scale of the development.

The main potential impacts of landfilling during construction and operation on the existing air quality are dust, odour and landfill gas emissions.

Dust emissions will be controlled at the site by the following means:

- A wheel wash will be installed at the site
- Waste will be covered daily
- Following completion of filling, each cell will be capped and seeded with grass
- A mobile water bowser will be used during dry periods to dampen vehicle routes
- During extended dry periods, stock piles will be kept moist

- The construction of a berm, approximately 3.5 m above ground level around the active area, will help capture and mitigate any dust emissions from the disposal area

Odours from the landfill will be controlled by the proper management of waste disposal at the waste face. There will be strict adherence to waste acceptance criteria, deposition of daily cover and immediate burying of any odourous material. The waste will be covered daily with suitable material which will include soil cover, reusable textile or PVC.

Landfill gas will be collected in the gas collection system, flared and in the long term if feasible, used in a gas utilisation plant to generate electricity. Furthermore, as this is a residual waste landfill, the proportion of biodegradable waste (gas producing) for disposal at the site is reduced. Flaring will also destroy odourous compounds associated with landfill gas.

2.3. Soils & Geology

The site is underlain by a thin peaty gley-type soil that is generally poorly drained. Beneath this is a layer of unconsolidated overburden consisting of glacial till. The overburden varies in thickness across the site (from 10 to 30 metres in the area of the landfill footprint). Bedrock beneath the site comprises sandstone.

The removal of topsoil and vegetation could expose soil to erosion from stormwater runoff or wind erosion. Leakage of leachate from the landfill could contaminate the soil.

To mitigate against impact on soils and geology, the landfill will be developed on a phased basis and consequently the construction and filling of one cell will coincide with the closure, capping and replanting of a completed cell. This will minimise the area of exposed soil at any one time.

The landfill will be lined with a composite barrier in compliance with the conditions of the licence and also in accordance with the standards set down in the EU Directive on the Landfill of Waste. This barrier together with other leachate management infrastructure will protect the soil against contamination.

2.4. Water Quality, Hydrology & Hydrogeology

Drainage from the existing site to the Farahy River is via a series of land drains located at the edge of each field. Many of these drains remain dry except for the periods after very heavy rainfall events.

Cork County Council and the EPA monitor water quality of the river both upstream and downstream of the now closed landfill site. Monitoring results indicate that water quality is similar in nature, upstream and downstream of the site.

Groundwater beneath the site flows in a south easterly direction towards the Farahy River. Groundwater in the bedrock at the site is naturally protected from pollution by the presence of a thick, low permeability, glacial till layer. Consequently, the groundwater quality at Ballyguyroe is generally good.

There is no evidence that the groundwater in the bedrock has been impacted by the now closed Cork County Council landfill. There are private domestic wells in the vicinity of the site but these are either hydraulically upgradient or located in a different groundwater catchment to that of the proposed landfill.

There is potential for surface water contamination arising from any earthworks operation. Additionally, an un-engineered landfill would have the potential to allow contamination (leachate) to enter the surface watercourses.

During construction, the contractor will be required to put in place a surface water quality management plan. This plan will cover procedures for handling stockpiles on site, oils on site and any other chemicals that may be used during site construction.

There are a number of key design features and waste licence conditions to ensure that impacts are minimised during construction and operation of the facility.

Surface water discharges will be controlled and mitigated using the storm water retention pond. The pond will control the rate of discharge to the Farahy river. It will also facilitate settlement of suspended solids, its discharge will be continuously monitored and its outlet will be closed in the event that contamination is detected.

Groundwater will be protected from contamination by leachate through the use of engineered lined cells. The entire lining system will be subject to strict quality assurance to ensure compliance with the standards. Leachate generated during the operation of the landfill will be fully contained within the cells and pumped to a leachate lagoon for collection before final disposal at an approved off-site wastewater treatment plant.

2.5. Ecology

Flora

The site is surrounded by a mixture of planted forestry and natural scrubland enclosing rough pasture. A mature conifer plantation of Sitka spruce and Lodgepole pine is located outside the western site boundary. The River Farahy runs along the eastern boundary of the site and east of this there is improved grassland. The area of the landfill footprint comprises mainly of hedgerows and wet grasslands. Poor draining soils in this area of the site restrict its use to rough grazing.

Small pockets of improved grasslands are found on the southern part of the site. Strong mixes of hedgerows containing Blackthorn, Bramble, Gorse, Hawthorn, Willow and occasionally Holly and Ash trees surround some of the fields. There is little in the way of significant deciduous woodland except in the vicinity of the Farahy River, east of the site.

Fauna

The most common mammal species encountered using the site and in adjoining lands was the red fox. Rabbits were observed in the hazel and birch woodlands bordering the River Farahy to the east of the site and wood mice were recorded in the hazel woodland to the north east of the site. Evidence of bank vole was identified within the hazel and birch woodlands and badger activity was recorded in two locations. Evidence of otters was also recorded along the River Farahy. No evidence of bats was found during the surveys of the site.

Birds

Bird species such as kestrel, pheasant, wood pigeon, meadow pipit, swallow, wren, robin, stonechat, song thrush, blackbird, goldcrest, coal tit, blue tit, magpie, rook, green finch and bullfinch were identified on or in the vicinity of the site. Following consultation with the National Parks and Wildlife Service (NPWS), a hen harrier survey was conducted during 2006. Results of the 2006 hen harrier survey suggested that four hen harrier breeding pairs occupied the general area within 5 km of the site boundary. Although hen harriers were observed in the study area, the habitat survey of the site indicated that it currently does not provide suitable nesting habitat and appears to only provide a small foraging habitat relative to the availability of such habitat in the wider area. No successful nesting attempts occurred within 500 m of the site boundary but a possible nesting area may have been present greater than 1.5 km north east of site.

The proposed development will result in the loss of wet grassland and wet heath habitats. Internal hedgerows will be progressively removed but will also be progressively replaced with appropriate replanting as the phases are reinstated. There will be a temporary loss of habitat but the phased nature of development and reinstatement will minimise the loss. In addition, the habitat loss on the site will impact on the birds using the area. However, the development of the site will not result in significant nesting and foraging habitat loss for the hen harrier.

All species of both mammals and birds identified on the site will continue to occur in similar habitats in the surrounding area.

A comprehensive landscaping programme will be undertaken at the site and this will consist of native woodland boundary planting. The species chosen will be native and will reflect the species composition of the surrounding hedgerows.

2.6. Landscape

The existing landscape comprises a mixture of planted forestry and natural scrubland enclosing rough pasture. Apart from coniferous plantation which is the dominant land use, the main land use is typically pastoral grazing for dairying, cattle and sheep rearing. The poor draining soils in the immediate area of the site, means that land use here is restricted to rough grazing. Strong mixes of hedgerows containing Blackthorn, Bramble, Gorse, Hawthorn, Willow and occasionally Holly and Ash trees surround some the fields. There is little in the way of significant deciduous woodland.

There is a distant view of the site from the town of Kildorrery, located on a hill approximately 4.5 km south east of the site.

The greatest potential visual impact will arise during the construction phase with impacts relating to hedgerow removal in some parts of the site, changes in ground level and construction of infrastructure such as the administration building and internal roads.

Given the nature of the topography and presence of the coniferous plantations, viewing of the landfill site during development will be restricted to areas to the south and in particular to those areas on the distant north-facing slopes of hills at Ballyguyroe south, Farahy and Kildorrery. Otherwise, viewing towards the site is from a low vantage relative to the site and is largely screened by plantations, topography, hedgerow or a combination of the same.

The proposed development is designed to reduce visual impact in a number of specific ways such as:

- The development will maximise the existing screening value of the topography and vegetation. All boundary vegetation will be retained throughout the life of the project as conditioned in the waste licence.
- The provision of significant additional effective screening buffer surrounding the landfill footprint will be planted prior to the commencement of landfilling
- Landfilling will be phased in a south to north progression and this will facilitate the construction of a finished face along the southern aspect from the start of filling operations. When this phase is constructed, it will be seeded and planted to integrate with the surrounding planting and it will provide immediate and progressive screening to subsequent filling phases of the landfill site

2.7. Cultural Heritage and Archaeology

No archaeological evidence of significance was encountered during studies carried out in the preparation of the environmental impact assessment.

Although the proposed development does not impact on any known archaeological sites or monuments, there is the possibility that previously unrecorded material or finds will be encountered during the ground works. In the event that excavations reveal items of archaeological interest, further investigations will be undertaken under licence from the Department of the Environment, Heritage and Local Government.

2.8. Land use and Material Assets

Material assets in the general area consist of agriculture, forestry, housing and tourism. There are no industrial areas or towns and villages in the immediate environment of the proposed site. Kildorrery, the nearest village, is located 4.5 km to the south east.

The main agricultural activity in the vicinity of the site is cattle grazing.

There are commercial, coniferous forests managed by Coillte to the west and north of the site.

The site bounds a closed landfill to the immediate north.

The site is on the foothills of the Ballyhoura Mountains. The Ballyhoura Way walking route is located 3.7 km to the north of the site. The Ballyhoura Mountains are popular for walking, hiking, bird watching and orienteering amongst other activities.

The proposed landfill site will be a modern engineered site and will be developed and operated to the highest standards in accordance with conditions and emission limit values specified by the Environmental Protection Agency. This will ensure that impact to existing land use and material assets is minimised. By its nature, a landfill is a temporary imposition on an area, in time its impact will diminish entirely.

Greenstar has a proven track record with respect to landfill management in counties Kildare, Meath, Galway and Wicklow. Greenstar will apply the same high standards to the operation of this facility.

3. INTERACTION OF THE ABOVE

There are many interactions between the potential effects described in the foregoing sections. The cumulative effects of the impacts will be both positive and negative. The main positive and negative impacts for the development at Ballyguyroe are listed below.

3.1. Negative Cumulative Effects

- Slight deterioration in local air quality due to increase in traffic numbers
- Slight increase in traffic movement on the N73
- Increase in traffic movement on the L1329

3.2. Positive Cumulative Effects

- The provision of a properly controlled waste management facility for the efficient disposal of waste produced in Cork and surrounding counties of Munster
- The provision of increased local employment
- Removal of unfair costs to Greenstar customers and waste producers in Munster