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DOCUMENT CONTROL SHEET

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1 AIR QUALITY

1.1 INTRODUCTION

RPS Group was commissioned to prepare the Air Quality Assessment report for the proposed development. This report should be read in conjunction with the site layout plans for the site and project description sections of the EIS. This assessment was prepared in accordance with the Guidelines on the information to be contained in Environmental Impact Statements (EPA 2002).

The proposed extension is to the existing waste transfer facility at Killarney Waste Disposal Ltd, Killarney, Co. Kerry. This study will identify, describe and assess the impact of the development in terms of its effect on air quality. Particular attention will be focused on sensitive receptors, such as residential areas adjacent to the site, and to the extent of the exposure of these receptors to airborne pollutants derived as a result of the development.

A baseline air quality assessment has been carried out in the area around the site of the proposed development. This survey will identify the existing pollutant trends in the area and aims to establish sufficient spatial information in order to determine compliance with relevant ambient air legislation. Additionally, comparison with longer period limit values can be used to establish trends and are important in defining baseline air quality.

1.2 RECEIVING ENVIRONMENT

1.2.1 General

The site of the proposed extension to the existing waste transfer facility is at Killarney Waste Disposal Ltd., Killarney, Co. Kerry. Killarney Waste Disposal is located to the north west of Killarney town in a rural area. The site is bordered to the east and north by residential dwellings and the main road. Wooded and agricultural lands border the western perimeter, with agricultural lands and a private access road leading to some residential dwellings located to the south of the site. This private access road meets the main road directly east of the site.

The nearest sensitive receptors are situated to the south and east and northeast along the main road and the private access road. The nearest receptors are approximately 50m from the site at either end of the private access road. The most distant receptor is on the main road approximately 400m from the site boundary.

The site is located in a rural area with no major roads nearby. There is no major industry in the vicinity of the site that may have an impact on local air quality.

1.2.2 Baseline Air Quality

A total of five sample locations were chosen to represent the baseline air quality in the vicinity of the proposed development. These locations are listed in ***Table 1.2.2.1*** and presented in ***Drawing DG0001-05.***

Reference	Description
A1 and D1	Western perimeter of site. Bordered by woodland
A2 and D2	At site entrance
A3 and D3	Outside House H1 to north west of site.
A4 and D4	To east of site, at junction close to House H14
A5 and D5	To south of site, close to houses H19 and H18

Table 1.2.2.1: Description of Air and Dust Monitoring Locations

As a result of the existing site conditions and the potential for traffic derived pollution and heating derived pollution, the following parameters were monitored:

Benzene

The sources associated with individual volatile organic compounds (VOCs) tend to be dependent on the nature of industries in the sample region. Methane is a naturally occurring VOC from plants and animals but is also generated as a by-product of certain industries. Benzene and other aromatic compounds and alkanes are most likely derived from petrol driven vehicle exhausts. Heavier semi-volatile organic compounds are frequently derived from diesel-powered engines. Benzene is a known carcinogen, poisonous by inhalation and a severe eye and moderate skin irritant.

At each of the five sites the air was monitored for benzene, over a 30-day period, using benzene diffusion tubes. The sample tubes were analysed for benzene at a UKAS accredited laboratory (Gradko International, Winchester). The results are presented in ***Table 1.2.2.2***

Location	Sampling Period	Average Benzene (µg/m³)
A1	23/07/04-24/08/04	0.84
A2	23/07/04-24/08/04	0.52
A3	23/07/04-24/08/04	0.45
A4	23/07/04-24/08/04	0.65
A5	23/07/04-24/08/04	0.65
Limit Value	-	5(1)

Table 1.2.2.2: Average Benzene Concentrations at each location as measured by passive diffusion tubes.

Note:(1) EU Directive 2000/69/EC

The results indicate that ambient concentrations of benzene are currently low in the area with all locations within the EU limit. The concentrations of benzene recorded at the five locations are quite similar. The lowest level of benzene recorded was at A3, which is expected as vehicles passing this location, do so at high speed, which contributes less to the build-up of benzene in the vicinity of the sampling location. The highest level of benzene recorded was at A1. This is most likely due to the HGVs and plant equipment on site. The levels detected at the remaining locations are all similar and are typical of rural benzene concentrations. The results suggest that the greatest source of benzene in the area is from motor vehicle exhausts. All levels are well below EU limits and are typical of benzene levels in rural locations.

NO_2 (Nitrogen Dioxide)

Nitrogen dioxide is classed as both a primary pollutant and a secondary pollutant. As a primary pollutant NO_2 is emitted from all combustion processes (such as a gas/oil fired boiler or a car engine). Potentially the main sources of primary NO_2 for the proposed development will be from heating-related emissions and vehicle exhausts.

As a secondary pollutant NO_2 is derived from atmospheric reactions of pollutants that are themselves, derived mainly from traffic sources (e.g. volatile organic compounds). Secondary pollution is usually derived from regional sources and may be used as an indicator of general air quality in the region. Nitrogen Dioxide has been shown to reduce the pulmonary function of the lungs. Long-term exposure to high concentrations of NO_2 can cause a range of effects, primarily in the lungs, but also in the liver and blood.

At each of the five sites, levels of NO_2 were measured using diffusion tubes, which were left on site for a 30-day period. The tubes were then analysed using UV spectrophotometry, at a UKAS accredited laboratory (Gradko International, Winchester), giving an average concentration over the period. The results are presented in ***Table 1.2.2.3***.

Location	Sampling Period	Average NO_2 ($\mu g/m^3$)
A1	23/07/04-24/08/04	4.90
A2	23/07/04-24/08/04	2.94
A3	23/07/04-24/08/04	2.94
A4	23/07/04-24/08/04	3.43
A5	23/07/04-24/08/04	2.45
Limit Value	-	40 (1)

Table 1.2.2.3: Average NO_2 concentrations at each location as measured by passive diffusion tubes.

Note:(1) EU Ambient Air Standard (1999/30/EC) (as an annual average)

As with the benzene results, the highest level of nitrogen dioxide determined is at A1, on the KWD site. This is to be expected due to the works traffic on the site passing close to and/or stopping in the vicinity of the sampling location. The levels at the other four locations are relatively similar, with the lowest level again recorded at A5, on the private access road. Again, the results suggest that the main source of NO_2 in the area is traffic-derived. As with the benzene result, NO_2 levels at all locations are well below the EU limit.

SO_2 (Sulphur Dioxide)

Sulphur dioxide is classed as a primary pollutant principally emitted from the combustion of fossil fuels (diesel, coal, oil, etc.) SO_2 is emitted from boilers and heating units. As traffic based pollutant, SO_2 is mainly emitted from vehicles running on diesel fuel, which will include most light goods vehicles (LGVs) and heavy goods vehicles (HGVs). SO_2 emissions from domestic heating may be significant as SO_2 is a major constituent of sulphurous smog. However, in recent years the government has significantly reduced the importance of SO_2 as an air pollutant with the introduction of smokeless fuel.

In addition, future EU legislation will attempt to minimise and eliminate the sulphur content in motor fuels. Consequently, concentrations of SO_2 in major urban areas are typically low and this is likely to decrease in future years with the broadening of the ban on non-smokeless fuels and the introduction of new EU fuel directives. Sulphur Dioxide is a known contributor to respiratory illness and respiratory symptoms. People with asthma are the most susceptible in the community to elevated SO_2 levels.

At each of the five sites, the air was monitored for sulphur dioxide over a 30-day period, using SO_2 diffusion tubes. The sample tubes were analysed for SO_2 at a UKAS accredited laboratory (Gradko International, Winchester). The results are presented in ***Table 1.2.2.4***.

Location	Sampling Period	Average SO_2 ($\mu g/m^3$)
A1	23/07/04-24/08/04	0.62
A2	23/07/04-24/08/04	0.94
A3	23/07/04-24/08/04	0.46
A4	23/07/04-24/08/04	1.25
A5	23/07/04-24/08/04	0.46
Limit Value	-	20[1]

Table 1.2.2.4. Average SO_2 concentrations at each location as measured by passive diffusion tubes.

Note:(1) EU Ambient Air Standard (1999/30/EC) (as an annual average)

The levels of SO_2 recorded at the five locations are well below EU limits and are typical of rural summertime SO_2 level. Again, the higher levels are recorded on the KWD site at A1 and A2, most likely due to site traffic. The higher result recorded at A4 can be attributed to the house adjacent to the sampling location. There was renovations work taking place at the house during the survey and this may have a direct effect on SO_2 levels recorded at this location during the sampling period.

Dust

Dust is characterised as encompassing particulate matter with a particle size of between 1 and 75 microns (1-75μm). Deposition typically occurs in close proximity to each site and potential impacts occur within 500 metres of the dust generating activity as dust particles fall out of suspension in the air. Larger particles deposit closer to the generating source and deposition rates will decrease with distance from the source.

Sensitivity to dust depends on the duration of the dust deposition, the dust generating activity, and the nature of the deposit. Therefore, a higher tolerance of dust deposition is likely to be shown if only short periods of dust deposition are expected and the dust generating activity is either expected to stop or move on.

At each of the five sites, dust deposition levels over the 30-day period were recorded using Bergerhoff gauges. The results are presented in ***Table 1.2.2.5***

Location	Sampling Period	Dust Deposition Rate ($mg/m^2/day$)
D1	23/07/04-24/08/04	172.7
D2	23/07/04-24/08/04	173.8
D3	23/07/04-24/08/04	116.6
D4	23/07/04-24/08/04	90.0
D5	23/07/04-24/08/04	277.7[2]
Limit Value	-	350[1]

Table 1.2.2.5 Dust deposition levels recorded at each location using Bergerhoff gauges.

Note 1: TA Luft Technical Instructions On Air Quality Control Guidelines. The Limit Value is established to protect against considerable disadvantages or substantial impairments.
Note 2: Sample D5 contained excessive foliage and plant debris from overhanging trees.

As with benzene and NO_2, the results vary with distance from the main activities in the area. As expected, the highest levels of dust recorded are on the KWD site (D1) and at the site entrance (D2). As distance from the site increases, the dust levels decrease and the lowest levels are recorded at the most distant sampling locations (D3 and D4). It should be noted that the sample at D5 was heavily contaminated with debris from overhanging trees and is not a representative of dust levels in the area and should be discounted.

The dust levels recorded in the area are below the TA Luft Guidelines Limit Value.

1.2.3 Assessment Criteria

The EU has introduced several measures to address the issue of air quality management. In 1996 Environmental Ministers agreed a Framework Directive on ambient air quality assessment and management (Council Directive 96/62/EC).

As part of the measures to improve air quality, the European Commission has adopted proposals for daughter legislation under Directive 96/62/EC. The first of these directives to be enacted, 1999/30/EC, has set limit values which replaced existing limit values under Directives 80/779/EEC, 82/884/EEC and 85/203/EEC in April 2001.

The new directive, as relating to limit values for sulphur dioxide, lead, PM_{10} and nitrogen dioxide, is detailed in ***Table 1.2.3.1*** EU Council Directive 2000/69/EC defines limit values for both carbon monoxide and benzene in ambient air and is presented in ***Table 1.2.3.2***.

The National Air Quality Standards Regulations 2002 (S.I. No. 271 of 2002) transpose those parts of the "Framework" Directive 92/30/EC on ambient air quality assessment and management not transposed by Environment Protection Agency Act 1992 (Ambient Air Quality Assessment and Management) Regulations 1999 (S.I. No. 33 of 1999).

The 2002 Regulations also transpose, in full, the 1st two "Daughter" Directives 1999/30/EC relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air and 2000/69/EC relating to limit values for benzene and carbon monoxide in ambient air.

Table 1.2.3.1: EU Ambient Air Standard 1999/30/EC.

Pollutant	Regulation	Limit Type	Margin of Tolerance	Value
Nitrogen Dioxide	1999/30/EC	Hourly limit for protection of human health - not to be exceeded more than 18 times/year	50% until 2001 reducing linearly to 0% by 2010	200 µg/m^3 NO_2
		Annual limit for protection of human health	50% until 2001 reducing linearly to 0% by 2010	40 µg/m^3 NO_2
		Annual limit for protection of vegetation	None	30 µg/m^3 NO NO_2
Lead	1999/30/EC	Annual limit for protection of human health	100% until 2001 reducing linearly to 0% by 2005	0.5 µg/m^3
Sulphur Dioxide	1999/30/EC	Hourly limit for protection of human health - not to be exceeded more than 24 times/year	43% until 2001 reducing linearly until 0% by 2005	350 µg/m^3
		Daily limit for protection of human health - not to be exceeded more than 3 times/year	None	125 µg/m^3
		Annual & Winter limit for the protection of ecosystems	None	20 µg/m^3
Particulate Matter Stage 1	1999/30/EC	24-hour limit for protection of human health - not to be exceeded more than 35 times/year	50% until 2001 reducing linearly to 0% by 2005	50 µg/m^3 PM_{10}
		Annual limit for protection of human health	20% until 2001 reducing linearly to 0% by 2005	40 µg/m^3 PM_{10}
Particulate Matter Stage 2	1999/30/EC	24-hour limit for protection of human health - not to be exceeded more than 7 times/year	To be derived from data and to be equivalent to Stage 1 limit value	50 µg/m^3 PM_{10}
		Annual limit for protection of human health	50% until 2005 reducing linearly to 0% by 2010	20 µg/m^3 PM_{10}

Table 1.2.3.2: EU Ambient Air Standard – 2000/69/EC.

Pollutant	Regulation	Limit Type	Margin of Tolerance	Value
Benzene	2000/69/EC	Annual limit for protection of human health	100% until 2003 reducing linearly to 0% by 2010	5 µg/m^3
Carbon Monoxide	2000/69/EC	8-hour limit (on a rolling basis) for protection of human health	50% until 2003 reducing linearly to 0% by 2005	10 mg/m^3

1.3 CHARACTERISTICS OF THE PROPOSAL

Killarney Waste Disposal Ltd (KWD) proposes to increase the total annual intake from 16,500 tonnes per annum (tpa) to 40,000 tpa. Only non-hazardous waste is accepted on site. As part of the expansion, it is proposed to build an additional shed for processing. The new shed will be built on the existing fill area on the site and will house sorting, baling and various recycling equipment. Wood shredding will continue to take place outside. It is also proposed to construct a hard surface road around the perimeter of the proposed new shed.

1.4 POTENTIAL IMPACTS OF THE PROPOSAL

1.4.1 Construction Phase

There is the potential for a number of emissions to atmosphere during the construction of the development. In particular, the construction activities may generate quantities of dust, particularly in drier weather conditions. This problem is exaggerated when vehicles transporting sands/gravels/soils etc. to and from the site have the potential to cause an environmental nuisance several kilometres from the facility. The construction vehicles, generators etc., will also give rise to petrol and diesel exhaust emissions, although this is of minor significance compared to dust.

1.4.2 Operational Phase

Scheduled Emissions

Regarding operations at the proposed development, the activities to be located in the development are planned for transfer, sorting, baling and recycling. As a result, there are no major scheduled emissions (i.e. through stacks, vents, etc.) planned for the development and site activities are unlikely to cause any deterioration in local air quality.

There may be an impact from unscheduled emissions of dust from HGV movements on the site. This impact will be directly related to the working practices on the site. If a satisfactory dust minimisation plan is implemented (i.e. wheel washes, road sweepers, etc), the potential impact of fugitive dust is expected to be minimal.

As there is no waste deposited in the site, there is no potential for the build up of methane and landfill gas. Consequently, the emissions from a landfill gas flare unit will not be generated at the proposed development.

Odours are a potential nuisance from any facility that involves waste storage or transfer. Fugitive odours (i.e. not through stacks or vents) from landfills, waste transfer stations, baling stations, etc. arise mainly from the uncontrolled anaerobic biodegradation of waste to produce unstable intermediates.

Odours are generated by a number of different components, the most significant being the sulphur containing compounds (thiols, mercaptans, hydrogen sulphide), volatile fatty acids (butyric acid, valeric acid), amines (Methylamine, Dimethylamine), phenols (4-methylphenol) and chlorinated hydrocarbons (trichloroethylene, tetrachloride).

Most of these compounds have very low odour threshold concentrations and therefore are capable of generating odours even in very low concentrations. Different concentrations and mixtures of these compounds can intensify or reduce odour threshold concentration, determined as synergism and antagonism respectively.

A series of design features, work practices and mitigation measures for the reduction of fugitive odour emissions are outlined later in this report.

The operators of the proposed development will apply to the Environmental Protection Agency for a Waste Licence for all on-site activities. Consequently the EPA will require a level of operation that will not impinge on the surrounding environment and decide on the extent and nature of any environmental monitoring (e.g. dust or odour) to be carried out.

Road Traffic

There are relatively low volumes of traffic on the adjoining roads currently in the area of the proposed development. Any traffic is free flowing and is not currently giving rise to significant air pollution. Any alterations to the existing traffic scenario, i.e. traffic volumes and/or a significant drop in vehicle speed (to gridlock speeds) may cause a variation in the pollutant concentrations. The Transportation Access and Traffic Assessment Report proposes some improvements to the existing road and access road to the facility. The proposed improvement of the road has the potential to improve traffic flow in the area and decrease the likelihood of a gridlock scenario occurring and thus mitigating against the predicted increase in traffic as a result of the proposed development.

"Do-Nothing" Scenario

The baseline survey results suggest that air quality in the vicinity of the proposed development is good and shows typical levels for a rural area with all pollutants within the relevant EU limits at all locations. The air quality may improve slightly in future years due to improvements in engine technology and greater controls on petrol, diesel, coal and gas composition and purity.

If the proposed development were not to take place, the current air pollutant concentrations will remain unchanged followed by potential decreases in future years for the reasons outlined above.

1.5 REMEDIAL OR REDUCTIVE MEASURES

1.5.1 Construction Phase

In order to ensure that no dust nuisance occurs, a series of measures will be implemented. Site roads shall be regularly cleaned and maintained as appropriate. Hard surface roads shall be swept to remove mud and aggregate materials from their surface. Any un-surfaced roads shall be restricted to essential site traffic only. Furthermore, any road that has the potential to give rise to fugitive dust must be regularly watered, as appropriate, during dry and/or windy conditions.

In the event of the access road and local road widening taking place, the above measures should be implemented and all reasonable dust reduction measures used during the construction process.

Vehicles using site roads shall have their speed restricted, and this speed restriction must be enforced rigidly. On any un-surfaced site road and on hard surfaced roads that site management dictates speed shall be restricted to 20 km per hour.

Public roads outside the site shall be regularly inspected for cleanliness, and cleaned as necessary.

Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to wind. Water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods.

1.5.2 Operational Phase

Road Traffic

The emission of pollutants from road traffic can be controlled by either controlling the number of road users or by controlling the flow of traffic. For the majority of vehicle-generated pollutants, emissions rise as speed drops. Emissions are also higher under stop-start conditions when compared with steady speed driving. The free flow of the traffic in the vicinity of the proposed development is essential in order to minimise the generation of traffic related pollutants. The proposed improvement of the local road and access road should improve the available sightlines and thus assist with the free-flow of traffic in the area.

Odours

The potential for odour emissions may be minimised by a series of design features, work practices and mitigation measures. Each of these measures is outlined briefly below:

All of the on-site operations scheduled for the site (including storage of bales) should be housed indoors in the proposed purpose built shed. All loading and unloading should be carried out in designated loading bays. All tipping should be carried out in designated tipping areas. The site layout should be maximised so as to keep any outdoor operation as far as possible from the nearest sensitive receptors.

All work surfaces and floors should be cleaned and regularly maintained to a suitable standard to prevent the build up of anaerobic bacteria. All areas where there is a potential for the generation of odour (i.e. temporary storage areas, skips, bins, etc) should be covered to reduce the potential for escape of odours. Residence time for waste, even non-odorous waste, should be kept to a minimum before transfer.

In the event that an odour nuisance is occurring from the facility, despite the building design and work practices, there are a number of odour mitigation measures that may be employed. The main mitigation measure would be the use of a masking agent, which is a chemical component in an open-air spray specifically designed to mix with the fugitive odour. These masking agents typically have pleasant odours designed to "mask" the unpleasant odour fro the facility.

Alternatively, a counteractant may be employed, by a similar process to masking agents. Counteractants are designed to "interfere" with the odour molecules by a chemical or physical reaction and reduce their odour intensity.

1.6 PREDICTED IMPACT OF THE PROPOSAL

1.6.1 Construction Phase

The effect of construction on air quality will not be significant following the implementation of the proposed mitigation measures. The main environmental nuisance associated with construction activities is dust. However, it is proposed to adhere to good working practices and dust mitigation measures to ensure that the levels of dust generated will be minimal and are unlikely to cause an environmental nuisance. A series of such good working practices and mitigation measures are outlined earlier in this chapter.

1.6.2 Operational Phase

The predicted increases in traffic volumes as a result of the development along the existing road network are expected to be relatively low. At present there are 67 normal vehicle movements per day at the facility, and 59 HGVs movements. The proposed increase to 40,000 tpa will cause the number of normal vehicle movements to increase to 71 per day and the number of HCV movements to increase to 143 per day.

The total predicted number of HGV's per day is relatively low but does represent an increase in order of magnitude, of more than two. The proposed improvements to the local road and access road as recommended in the Transportation Access and Traffic Report will lead to better sightlines for traffic in the area and thus improve traffic flow. As long as the traffic remains free flowing, the predicted increase in traffic volumes should not have an adverse effect on local air quality.

In addition, the proposed new shed will be located in the yard where the surface currently consists of large aggregate stone fill. The creation of an enclosed shed and a hard surface road in place of the current surface has the potential to reduce local dust levels.

1.7 MONITORING

1.7.1 Construction Phase

It the event that dust from the proposed development is creating an environmental nuisance during the construction phase of the development, an ambient dust deposition survey is recommended. This survey should be carried out by qualified consultants using EPA approved Bergerhoff gauges. Typically these surveys require four gauges on the site (one at each corner) and possibly one at the nearest sensitive receptor.

The TA Luft (German Government "Technical Instructions on Air Quality") states a guideline of 350 mg/m^2/day for the deposition of non-hazardous dusts. This value should be used to determine the impact of construction dust as an environmental nuisance should the need arise.

1.8 CONCLUSION

The result of the baseline air quality survey show that air quality in the vicinity of Killarney Waste Disposal Ltd., is typical of rural air quality and can be categorised as Zone D (explain) in relation to the EU Air Framework Directive and EPA Air Quality Zones *.

Providing that all reasonable mitigation measures are undertaken during the construction and operations phases of the proposed development of facilities at Killarney Waste Disposal Ltd., no significant negative impacts on local air quality are predicted.

* The EU Air Framework Directive deals with each EU Member State in terms of Zones and Agglomerations. For Ireland, four zones, A, B, C and D are defined in the Air Quality Regulations (2002)

The main areas defined in each zone are:

Zone A: Dublin Conurbation

Zone B: Cork Conurbation

Zone C: Other Cities and Large Towns comprising Galway, Limerick, Waterford, Clonmel, Kilkenny, Sligo, Drogheda, Wexford, Athlone, Ennis, Bray, Naas, Carlow, Tralee and Dundalk

Zone D: Rural Ireland, i.e. the remainder of the State excluding Zones A, B and C.

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1 Transportation Access and Traffic Report

1.1 INTRODUCTION

Killarney Waste Disposal is situated in the townland of Aghacurreen, approximately 4.5km north of Killarney, and approximately 3.3km off the N22 Killarney – Tralee National Road.

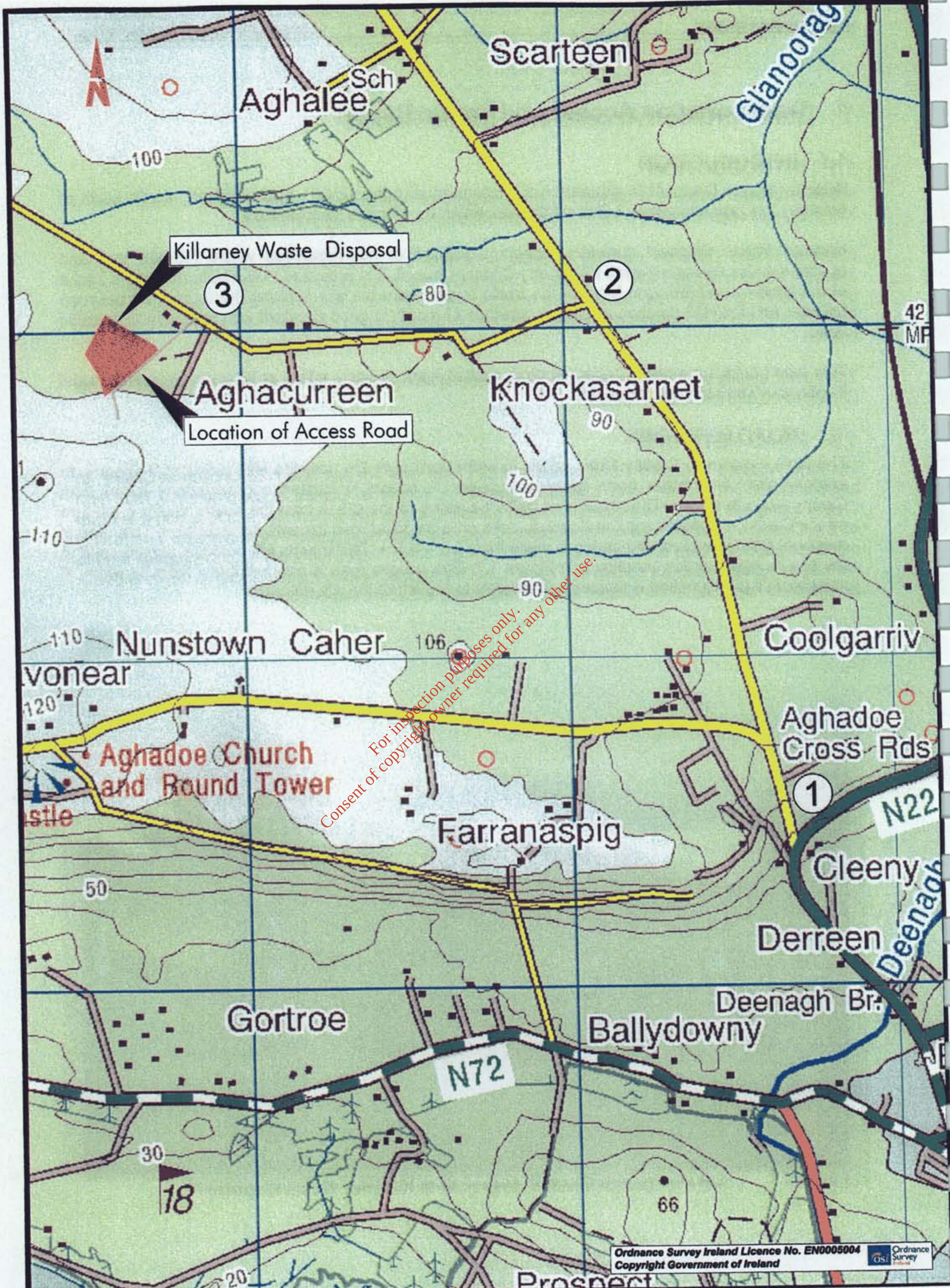
Killarney Waste Disposal currently accepts a mixture of non-hazardous waste (16,500 tpa) and operates under a Waste Permit from Kerry County Council. It is proposed to increase the waste intake at the facility to 40,000 tpa. Most of the traffic to and from the site is along the local road between Ballyhar and the N22 junction at Cleeny, which is of mostly a good standard with relatively high traffic flows.

This report details the traffic impact of an increased level of waste intake at Killarney Waste Disposal Facility to 40,000 tonnes per annum.

1.2 ROAD NETWORK

The local Aghalee to Cleeny Road varies in width from over 7m near the N22 junction at Cleeny, to approximately 5m further north towards Aghalee. A school is located approximately 2.7km from Cleeny along this road. The majority of traffic travelling to the site is from the south, taking a left turn off the Cleeny – Aghalee road at Knockasarnet, onto the local road towards Aghacurreen. This road is mostly of good standard and varies in width from 4.0 – 4.5m. Traffic turns left onto the access road to the site at Aghacurreen as shown in Figure 1.2. The access road is approximately 3.0m in width. A local access road junction is located immediately to the left of the site entrance.

Figure 1.1 Local road junction with access road to Killarney Waste Disposal



Traffic Survey Stations

Fig 1.2

1.3 TRAFFIC SURVEYS – BASELINE TRAFFIC

A traffic survey was carried out by RPS-MCOS at the existing site entrance with the following objectives:

- *To determine the existing traffic flows on the regional road adjacent to the site*
- *To determine the traffic patterns at the entrance to the site*
- *To enable an overall assessment to be made of the impact of the estimated traffic generated by the Materials Recovery Facility (MRF) on the existing road network*

The traffic survey was carried out on Thursday 1st July 2004 and consisted of a 12 hour survey (7.00 a.m. to 7.00 p.m.) at the 3 junctions as shown in Figure 1.2. The facility operating hours are from 7.00am to 8.00pm, Monday to Saturday inclusive.

Figures 1.2, 1.3 and 1.4 show the results of the survey carried out at the three survey stations in diagrammatical form. The percentage Heavy Commercial Vehicles (HCV's) recorded on each site is also shown.

On the day of the traffic survey there were 126 vehicular movements at the Killarney Waste Disposal facility, 47% (59) of which were HCV movements, over the twelve hour period.

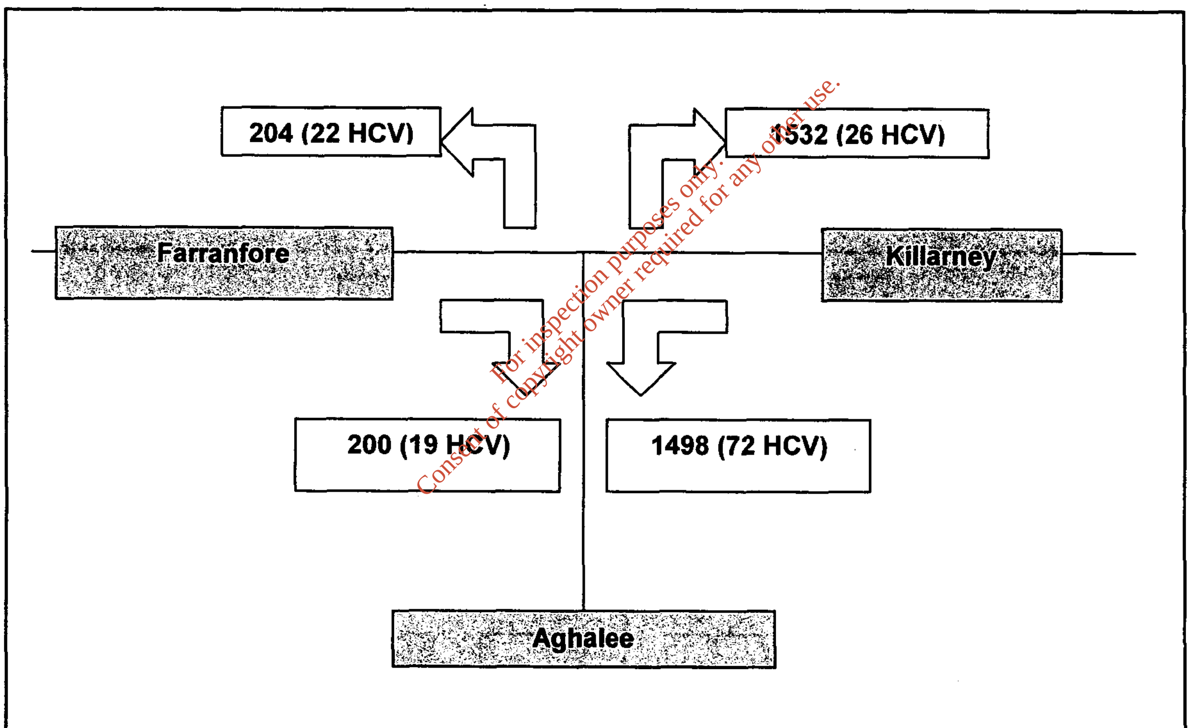


Figure 1.2 Station 1: N22 junction at Cleeny

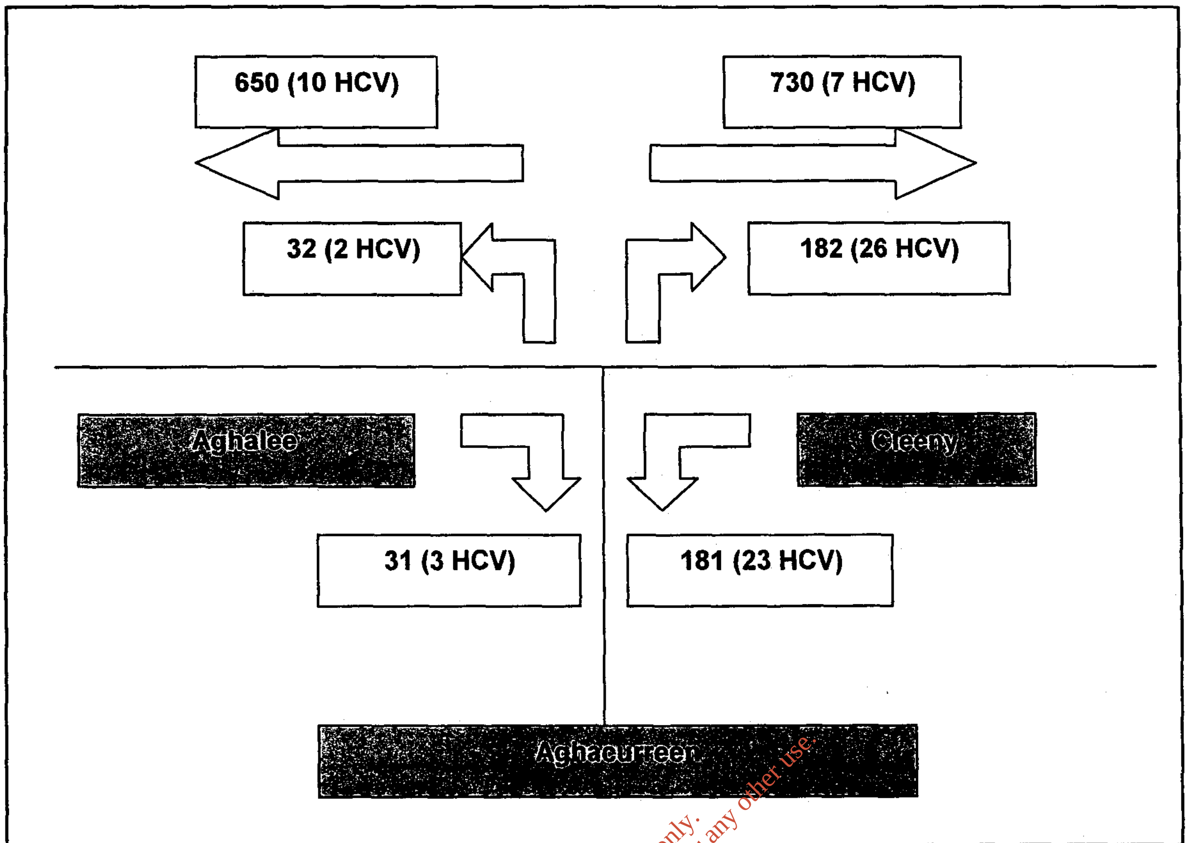


Figure 1.3 Station 2: Aghacurreen / Aghalee-Cleeny road junction at Knockasarnet

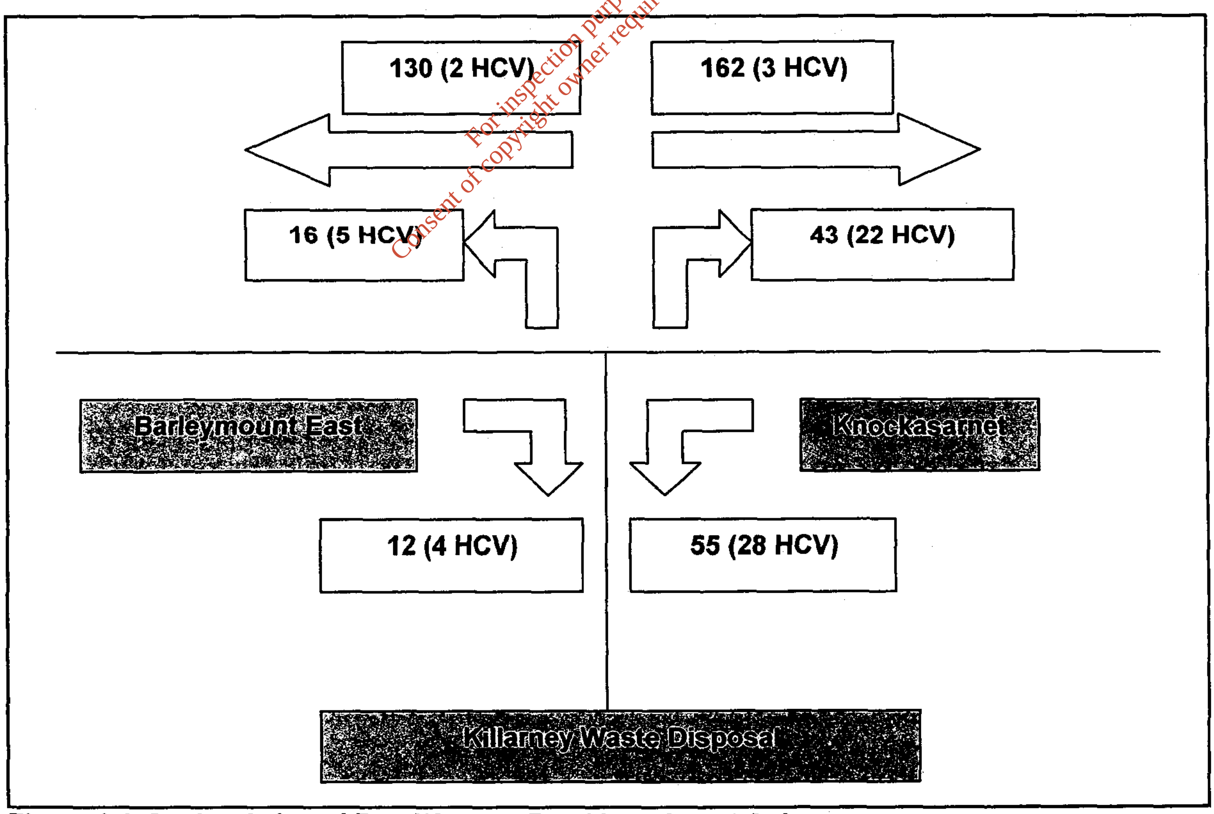


Figure 1.4 Station 3: Local Road/Access Road junction at Aghacurreen

1.4 TRIP DISTRIBUTION

At present, 82% of normal vehicle traffic enters the facility from the Knockasarnet side with the remaining 18% entering from the Barleymount side. These proportions remain approximately constant when HCVs only are considered. In the assessment of future traffic assignment for the current users of the facility, it is assumed that these proportions remain unchanged. This assumes that waste will continue to come broadly from the same sources over the operating period of the facility.

A 5% growth rate per annum is presumed for non MRF traffic along the Cleeny to Ballyhar Road.

1.5 TRAFFIC GENERATION

The maximum tonnage allowed at the Killarney Waste Disposal facility at present is 16,500 tonnes per annum (tpa). It is now proposed to increase this to 40,000 tpa.

At present there are 67 normal vehicle movements per day and 59 HCVs movements per day at the facility. Normal traffic movements consist of staff vehicles, general public vehicles coming to and from the facility to pay bin charges etc. and vehicle movements of people living in 3 no. houses which use the same access road as the facility. It is assumed that the number of normal vehicle movements will increase by 5% per annum to 71 movements per day. Based on the number of HCV movements recorded in the survey, it is predicted that, in the worst case scenario, the proposed increase to 40,000 tpa will result in 143 HCV movements per day. However the actual future HCV movement daily figure is expected to be considerably less than this as a result of the KWD's current waste collection system operating more efficiently with an increase in the numbers of customers and collection routes which can be achieved at an increased maximum annual tonnage of 40,000 tpa.

1.6 TRAFFIC IMPACT

1.6.1 Daily movements

From the count data, the number of daily vehicular movements generated by the facility at present is 126 including 59 HCV movements per day.

1.6.2 Peak hour

The busiest hour of the day for MRF traffic was 4.00pm to 5.00pm, with 17 vehicle movements, including 7 HCV movements, which is approximately 12% of the total HCV movements of the day. Traffic movements relating to the facility are busiest during the hours of 9am to 1pm and 3pm to 5pm. Outside these hours, traffic movements are significantly lower.

The peak hour for HCVs alone was 11.00am to 12.00pm with 10 HCV movements. With the increase to 40,000 tpa, the peak flow in the worst case scenario of HCVs is estimated to be 17 HCV movements per hour (12% of 143), or one every three and a half minutes. Peak HCV flow not related to the facility occurs between 9.00am and 10.00 am, with 2 HCV movements occurring in this time.

1.6.3 Junctions

1.6.3.1 Junction at access road to site (Junction 3)

Improvements will be required at this junction in order to achieve the required sightlines. The design speed of the local road at this junction is taken to be 70Kph. The required sight distance in both directions for traffic coming onto this road is 90m. For traffic coming from the facility, branches of a garden tree inside the wall of the house at the left hand side of the junction obstruct the 90m sightline as shown in Figure 1.5. The sightline on the right hand side of the junction is obstructed by the presence of a hedge on the right hand side of the junction as shown in Figure 1.6. Two ESB/Eircom poles are also located in the hedge but their impact on the 90m sightline is negligible.

Figure 1.5 Junction at access road to site, looking left

Figure 1.6 Junction at access road to site, looking right

1.6.3.2 Ballyhar-Cleeny Road / Aghacurreen Road Junction (Junction 2)

Some minor junction improvements will be required at this junction for traffic coming from Aghacurreen. The design speed of the Ballyhar-Cleeny Road is taken to be 85Kph. The required sight distance in both directions for traffic coming onto this road is 120m. A person is shown standing 120m from the junction on both sides is shown in Figure 1.7 and Figure 1.8. The 120m sightline on the right hand side of the junction is achieved, but roadside grass will need to be removed to provide a 120m unobstructed sightline on the left hand side of the junction.

Figure 1.7 Ballyhar-Cleeny Road/Aghacurreen Road Junction, looking left

Figure 1.8 Ballyhar-Cleeny Road / Aghacurreen Road Junction, looking right

1.6.3.3 N22 junction at Cleeny (Junction 1)

The local road from Ballyhar has a sufficient sightline for traffic coming onto the N22 looking left. Overgrown grass and scrub on the verge of the N22 will need to be cleared in order to optimise the sightline in the right hand direction as shown in Figure 1.9.

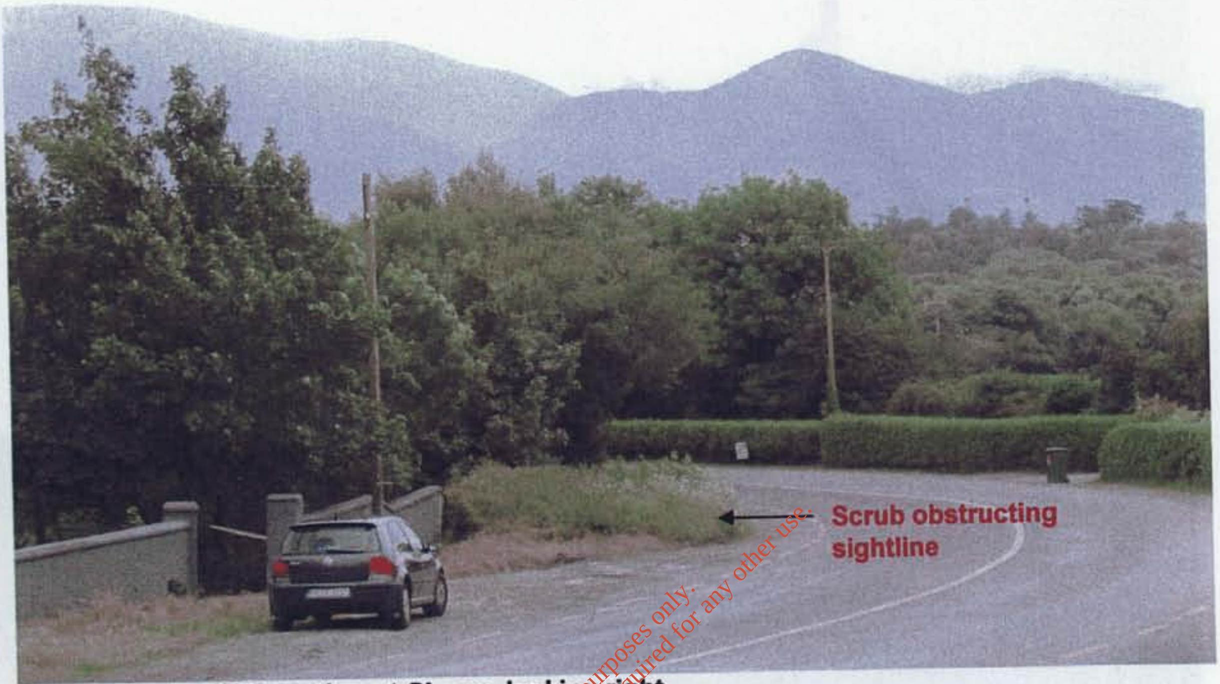


Figure 1.9 N22 junction at Cleeny, looking right

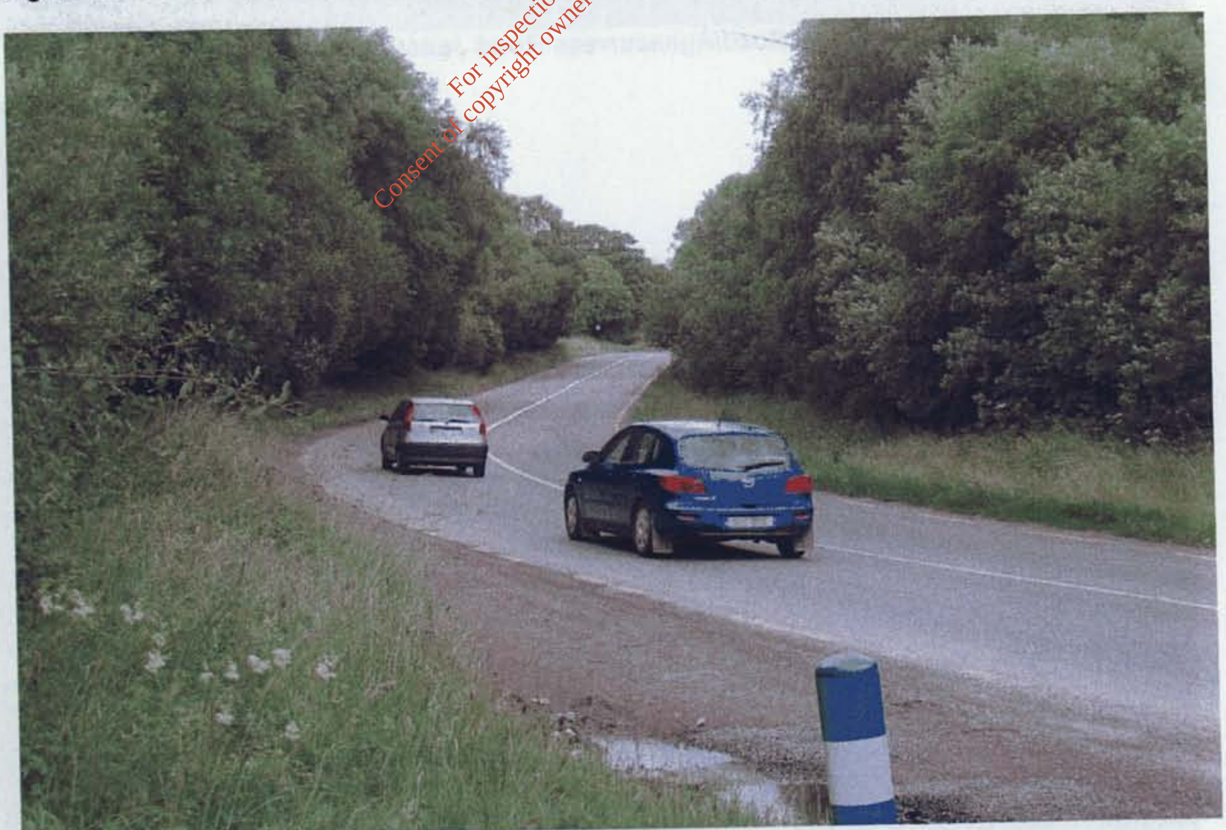


Figure 1.10 N22 junction at Cleeny, looking left

1.6.3.4 Conclusion

It will be necessary to improve the local road where possible between the junction at Knockasarnet and the Aghacurreen junction with the access road to the facility to enable it to carry the increased number of HCV's. Remedial works comprising hedge cutting and scrub removal will also have to be carried out at the N22 junction at Cleeny and at the junction of the facility access road at Aghacurreen to improve the junction sightlines.

1.7 ROAD SAFETY

Accident records for the years 1992 to 2002 were examined for the local Aghalee to Cleeny Road, the local Knockasarnet to Aghacurreen road and the N22 National Road in the vicinity of the junction at Cleeny.

Date	Townland	Minor	Serious	Fatality
22/5/93	Knockasarnet	√		
29/8/93	Knockasarnet	√		
5/6/93	Knockasarnet	√		
21/7/94	Coolgarriv	√		
15/10/94	Sheens		√	
24/7/94	Cleeny N22	√		
6/10/94	Coolgarriv N22	√		
12/11/94	Cleeny N22		√	
8/11/95	Aghaleemor			√
3/3/96	Cleeny		√	
17/6/96	N22	√		
4/9/96	Cleeny/Derreen N22	√		
30/6/97	Cleeny N22	√		
24/7/98	Cleeeny N22	√		
23/6/99	Derreen N22	√		
5/8/00	N22			√
30/7/01	Cleeny N22	√		
1/1/02	Knockasarnet	√		
	Total	13	3	2

Table 1.1 Accident Records 1992 - 2002

The additional turning movements and high HCV content at the entrance to the landfill need to be considered from a road safety viewpoint.

There were no accidents at the facility entrance during this period.

2 Mitigation Measures

Condition No. 14 of the current Planning Permission for the development granted by Kerry County Council on 23rd November 2004 requires that prior to the commencement of development, the developer shall pay a contribution of €37,575 to Kerry County Council (Planning Authority) in respect of public infrastructure and facilities benefiting the proposed development, as a special contribution within the meaning of Section 48 (2) (C) of the Planning and Development Act, 2000 towards the cost of implementation of the following schedule of works:-

Proposed Infrastructure and Facilities

1. Overlay of junction accessing the development from Local Road L7037 (Junction 3).
2. Widening and strengthening of junction of Local Road L7037 with Local Road L2019 (Junction 2) to allow for adequate HGV turning circles.
3. Overlay of junction of Local Road L7037 with Local Road 2019 (Junction 2).
4. Overlay of segments of Local Road L7037 (between Junctions 2 and 3) to facilitate additional HGV traffic.

In addition, the following minor mitigation measures are also proposed:

- Two warning signs should be placed both at Junctions 2 and 3 to warn drivers of the HCV movements ahead.
- Overgrown grass and scrub on the verge of the N22 at the Cleeny junction will need to be cleared by Kerry County Council in order to optimise the sightline on the right hand side for traffic coming onto the N22.
- A lay-by should be provided between Junctions 2 and 3 (Figure 1.2).
- The tree and hedge to the left side and right side of Junction 3 should be trimmed by Kerry County Council to improve sightlines (Figures 1.5 and 1.6).