

## 4. Human Beings

### 4.1 Introduction

This section of the Environmental Impact Statement (EIS) discusses the key issues effecting human beings and the potential impacts of the proposed development on them. Human Beings comprise the most important element of the environment. One of the principal concerns in the development or application process is that people, as individuals or as communities, should experience no diminution in their quality of life from the direct or indirect impacts arising from the construction and operation of a development. Ultimately, all the impacts of a development impinge on human beings, directly and indirectly, positively and negatively. Direct impacts include matters such as noise, air and landscape quality. Indirect impacts may relate to many other things such as flora, fauna, road traffic and property values. Analysis of the socio-economic impacts of a development complements the biophysical focus of other parts of the EIS. The key trade offs in assessing the costs and benefits of a development proposal tend to revolve around the balancing of socio-economic benefits, usually in terms of demography and employment, against biophysical cost within the broader context of sustainability.

The key issues include population, employment, land-use, and tourism. This study has been completed in accordance with guidelines as recommended by the EPA 'Guidelines on Information to be contained in Environmental Impact Statements' (EPA, 2000).

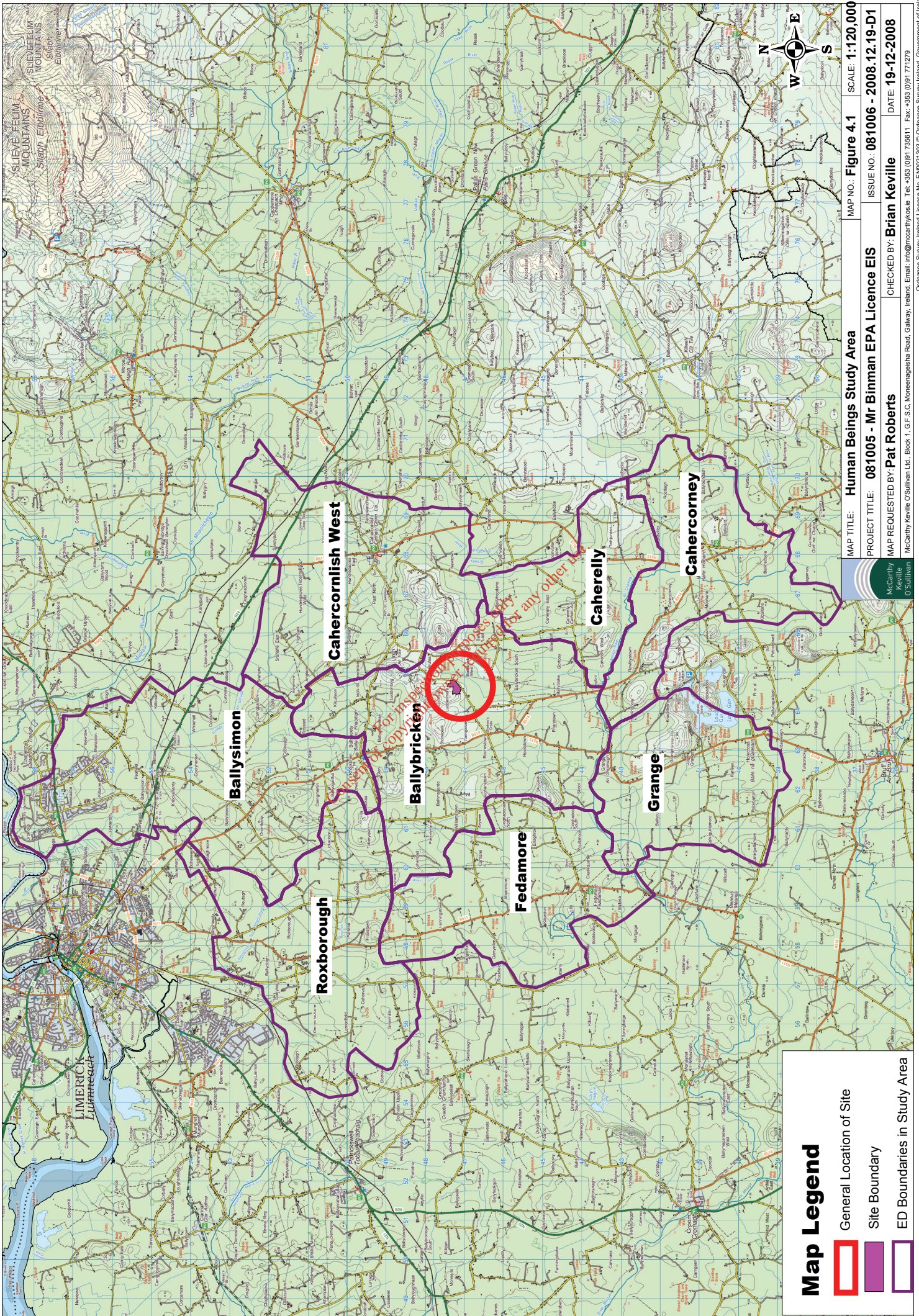
### 4.2 Methodology

Information regarding human beings and general socio-economic data were sourced from the Central Statistics Office, Limerick County Development Plan 2005-2011 and the Limerick City Development Plan 2004-2010. This includes an examination of the population and employment characteristics of the area. This information was sourced from the most recent census, The Census of Ireland 2006, The Census of Agriculture 2000 and from the Central Statistics Office website.




Census information is divided into State, Provincial, County, Major Town and Electoral Division level. In order to make inferences about the population and other statistics in the vicinity of the proposed mixed development, the study area was defined in terms of the Electoral Divisions (EDs). The development lies within the Ballybricken Electoral Division area and is surrounded by seven other EDs, Fedamore, Grange, Cahercorney, Caherelly, Cahercornlish West, Ballysimon and Roxborough. These eight EDs make up the Study Area for this section of the EIS. These EDs encompass a land area of approximately 17,503 hectares. The location of the EDs studied are shown in Figure 4.1.

The northern sections of the Roxborough and Ballysimon EDs now include the expanding urban areas on the southern outskirts of Limerick City. While these particular areas of the EDs are under development pressure, the remainder of the study area is rural in nature, with agriculture being the predominant land use. The vast majority of the study area is outside of settlement centres and is not subject to the same development pressure as those lands on the urban fringe of Limerick City, although there has been a significant increase in the number of one-off houses being built in rural parts of the County in recent years.

The eight EDs in the study area had a combined population of 18,389 in 2006 (based on 2006 Census of Ireland data).






### Map Legend

-  General Location of Site
-  Site Boundary
-  ED Boundaries in Study Area

MAP NO: <b>Figure 4.1</b>	SCALE: <b>1:120,000</b>
PROJECT TITLE: <b>Human Beings Study Area</b>	ISSUE NO: <b>081006 - 2008.12.19-D1</b>
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## 4.3 Receiving Environment

### 4.3.1 Population

The population of Ireland saw a rapid decline in the mid 19<sup>th</sup> century due to the famine and emigration, leaving the country with half its pre-famine population (6,528,799) at the beginning of the 20<sup>th</sup> century (3,221,823). The early 1960s saw the lowest recorded population figure of 2,818,314 in 1961 but since then the population of the state has increased gradually to 4,239,848 in 2006, a figure not recorded since the 1860's. The population of the State increased by 322,645 persons between 2002 and 2006 to reach the highest recorded census level since 1861, according to Census 2006. The total figure for the population enumerated on census night 23 April 2006 was 4,239,848 persons, compared with 3,917,203 in April 2002, representing an increase of 8.2 percent in four years or 2 per cent per annum.

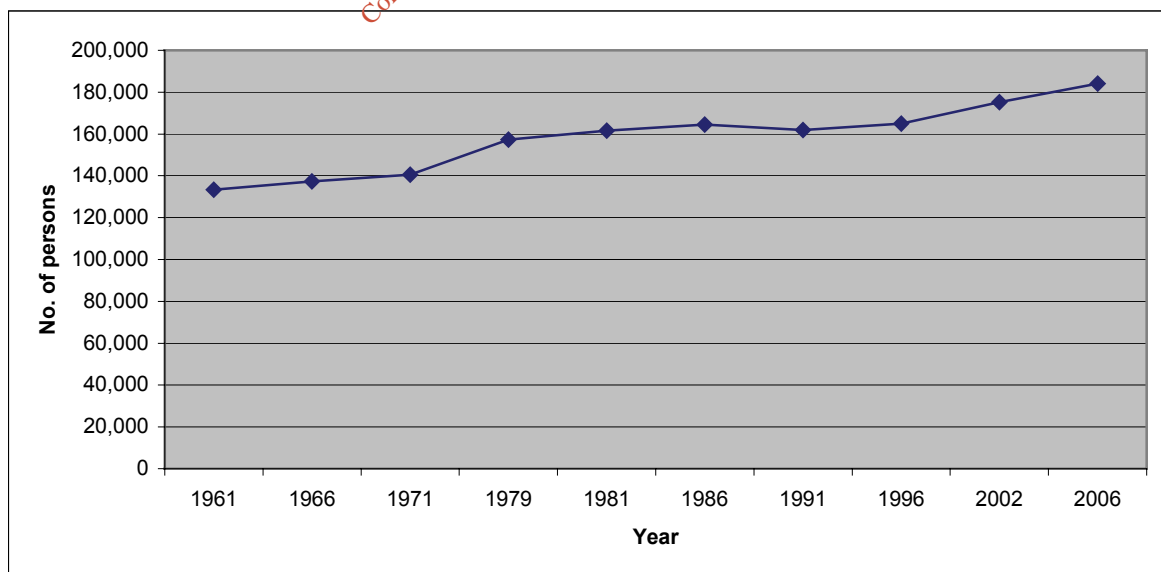
Limerick County saw a similar increase in population between the 2002 and 2006 Census, with an 8.4 percent increase of 10,235 people. The national and County trend was not followed by Limerick City, which recorded a slight decline in population of 1,484 people in the four years to 2006. This is shown in Table 4.1

**Table 4.1 Population Data from 2002 and 2006 Census**

Area	Persons 2002	Persons 2006	Actual change 2002-2006	Percentage change 2002-2006
Munster	1,100,614	1,173,340	72,726	6.6
Limerick City and County	175,304	184,055	8,751	5
Limerick City	54,023	52,539	-1,484	-2.7
Limerick County	121,281	131,516	10,235	8.4
Ireland	3,917,203	4,239,848	322,645	8.2

Following a static period between the 1980's, the population of Co. Limerick has increased steadily, increasing from 161,956 in 1991 to 184,055 in 2006, as shown in Figure 4.2.

**Figure 4.2 Number of Persons in County Limerick 1961-2006**



The population in the area surrounding the proposed development was also assessed, as shown in Table 4.2 below.

**Table 4.2 Population of the Study Area, showing percentage change 1996-2006**

Area	Population			% Population Change	
	1996	2002	2006	1996-2002	2002-2006
<b>State</b>	3,626,087	3,917,203	4,239,848	8.03	8.20
<b>Limerick County and City</b>	165,042	175,304	184,055	6.22	5.00
<b>Study Area EDs</b>					
<b>015 Fedamore</b>	1,003	1,020	1,088	1.69	6.70
<b>017 Grange</b>	398	469	493	17.84	5.10
<b>031 Cahercorney</b>	524	529	602	0.95	13.80
<b>050 Ballybricken</b>	1,238	1,391	1,606	12.36	15.50
<b>052 Ballysimon</b>	8,222	9,675	11,321	17.67	17.00
<b>055 Caherconlish West</b>	1,247	1,218	1,393	-2.33	14.40
<b>056 Caherelly</b>	182	228	281	25.27	23.20
<b>068 Roxborough</b>	1,520	1,678	1,605	10.39	-4.40

All EDs within the study area have seen population growth in the ten years between the 1996 and the 2006 Census. The rate of population growth is highest in Caherelly, albeit with a very low starting figure of 182 persons in 1996. Ballysimon ED, closest to the urban fringe of Limerick City understandably has the highest populations of any of the study area EDs. The population growth rates for the study area EDs are nearly all above the rates for the state and for County Limerick, with five out of eight having double-digit percentage population growth rates during the 2002 – 2006 period. Population declines were only recorded in two areas in the study area EDs, in Carheconlish West between 1996 and 2002 and in Roxborough between 2002 and 2006. The decline in population in Roxborough in the four years up to 2006 is reflective of the decline in population of Limerick City, as illustrated in Table 4.1.

Table 4.3 shows the population density of each of the EDs within the study area. population density in Limerick City is also given for comparison. These figures are derived by dividing the population of each ED in the 2006 census by its land area and are given in persons per square kilometre. This provides further information as to the nature of the EDs (rural or urban)

**4.3. Population Density within the study area, Limerick City and County. Shown as Persons per Hectare**

Area	Land Area (Sq km)	Population (Persons)	Density ( Person per Sq. km)
<b>015 Fedamore</b>	19.79	1,088	54
<b>017 Grange</b>	16.32	493	30
<b>031 Cahercorney</b>	17.69	602	34
<b>050 Ballybricken</b>	29.89	1,606	53
<b>052 Ballysimon</b>	30.58	11,321	370
<b>055 Caherconlish West</b>	25.35	1,393	54
<b>056 Caherelly</b>	11.57	281	24
<b>068 Roxborough</b>	23.84	1,605	67
<b>Limerick City</b>	20.35	52539	2581
<b>Limerick County</b>	2739	13156	48.01
<b>State</b>	70182	4239848	60

It can be seen from the results in Table 4.3 that the majority of the study area has a population density similar to that of a rural area with population densities of less than one hundred persons per square kilometre. This is in line with the average population density in county Limerick of 48 persons per square kilometre The exception to this is Ballysimon, with a population density of 370 persons per hectare. This highlights the more urban nature of this ED though even this area is far less densely populated than Limerick City, which has an average density of 2581 persons per square kilometre.

Table 4.4 shows the average household sizes in the State, County, Study Area and in Ballybricken, in which the proposed works are located.

**Table 4.4 Number of Households and Household Sizes in 1996 and 2002**

	2002		2006	
	No. Households	Avg. Size (persons)	No. Households	Avg. Size (persons)
<b>State</b>	1,287,958	2.9	1,469,521	2.8
<b>Limerick County</b>	38378	3.2	44,675	2.9
<b>Study Area</b>	4,628	3.5	5,931	3.1
<b>Ballybricken</b>	428	3.3	512	3.1

The average size of households in the State has shown a marginal decrease between the 2002 and 2006 censuses. This decline has been shown to be more rapid in Co. Limerick and the Study Area than the national average. The average household size in these areas is however still marginally larger than the national average.

Table 4.5 below shows the percentage of the population of the State, County Limerick and the Study Area within certain age groups as defined by the Central Statistics Office.

**Table 4.5 Population of State, County and Study Area expressed as percentage per age category in 2002**

2002	Age Group	0 – 14	15 – 24	25 – 44	45 – 64	65+
	<b>State</b>	21.1	16.4	30.1	21.2	11.1
	<b>Limerick</b>	20.9	18.2	28.4	22.0	10.5
	<b>Study Area</b>	18.1	31.1	24.8	18.8	7.2
<b>2006</b>	<b>State</b>	20.4	14.9	31.7	21.9	11.0
	<b>Limerick</b>	20.3	16.4	30.0	22.8	10.5
	<b>Study Area</b>	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable

The Study Area shows a lower percentage of the population in each of the age categories with the exception of the 15 –24 range, which is significantly higher than the national average. This is consistent with the age range attending third level education facilities and may indicate that there is accommodation for students within the study area.

## 4.3.2 Employment

### 4.3.2.1 Employment Status

The labour force consists of those people who are able to work (i.e.: are over 15, out of full time education and not performing duties that prevent them from working). In 2006, there were 2109498 persons in the labour force in Ireland; 164084 in Co. Limerick (excluding Limerick City) with 5304 workers within the Study Area.

Table 4. 6, shows the percentage of the total population aged 15+ in the labour force (i.e. at work, seeking first time employment or unemployed) and not in the labour force (i.e. student, retired, unable to work, etc.), for the State, Limerick and the Study Area. This allows the comparison of the employment situation in the study area with the county and national situations.

Both County Limerick and the Study Area showed a percentage of the population in the labour force that is below the national average. Though of those within the labour force, unemployment was below the national average in both Co. Limerick and the study area.

**Table 4.6 Percentage of total population aged 15+ in the labour force and those not in the labour force in 2002**

	State	Co. Limerick	Study Area
<b>% In Labour Force:</b>	62.49	58.17	54.19
<b>Of which is:</b>			
<b>% At Work</b>	91.4	93.02	93.2
<b>% 1<sup>st</sup> time Job Seeker</b>	1.3	1.1	1.6
<b>% Unemployed</b>	7.1	5.83	5.07
<b>% Not In Labour Force:</b>	37.5	41.83	45.81
<b>Of which is:</b>			
<b>% Student</b>	27.61	32.04	59.28
<b>% Home Duties</b>	30.57	29.06	18.6
<b>% Retired</b>	25.9	26.9	16.07
<b>% Unable to Work</b>	10.1	10.5	5.1
<b>% Other</b>	2.8	0.69	0.81

Of those outside the labour force, the State and Co. Limerick yielded similar results but the Study Area showed decreased percentages in all categories with the exception of students, which were greatly above the national average. This correlates with the age structure discussed in Table 4.5 and suggests that some accommodation for a third level institution may be present within the study area.

#### 4.3.2.2 Employment by Socio-Economic Group

Socio – economic grouping divides the population into categories depending on the level of skill or educational attainment required.

Higher professional includes scientists, engineers, solicitors, town planners and psychologists. Lower professional includes teachers, lab technicians, nurses, journalists, actors and driving instructors. Skilled occupations are divided into manual skilled like bricklayers and building contractors; semi – skilled e.g. roofers and gardeners; and unskilled, which includes construction labourers, refuse collectors and window cleaners.

Table 4.7 shows the population in terms of socio-economic groupings, with comparisons between the percentage composition in each grouping in the State, County and Local Study area. The groupings are each assigned a letter for the purposes of tabulation.

- A = Employers and Managers
- B = Higher Professional
- C = Lower Professional
- D = Non Manual
- E = Manual Skilled
- F = Semi Skilled
- G = Unskilled
- H = Own account Workers
- I = Farmers
- J = Agricultural Workers
- Z = All Others Gainfully Employed and Unknown

The socio-economic groupings within the study area show higher than the State and County averages in the Employer/Manager, Higher Professional and Other categories. They display close to average results in the Lower Professional grouping and lower than average percentages of the more manual and less skilled brackets. This may indicate that the Study Area is relatively affluent with higher than average percentages of those in the more professional sectors. The higher than

average figures in the 'Other' grouping may be indicative of the student population within the area, with temporary or part time work being undertaken.

**Table 4.7 Percentages of those employed in each socio – economic group in the State, Co. Limerick and the Study Area.**

Grouping	%A	% B	%C	% D	% E	% F	% G	% H	% I	% J	% Z
State	16.05	5.86	9.47	15.98	11.64	9.15	4.19	5.84	5.81	0.72	15.28
Limerick County	14.44	6.02	9.28	13.37	12.64	10.25	4.04	5.3	9.45	0.76	14.39
Study area	19.6	10.71	9.68	14.04	8.35	5.95	2.31	4.56	4.69	0.22	19.65

#### 4.3.2.3 Sources of Employment

Although the Luddenmore area is essentially rural it falls under an area categorised as an “*area of strong urban influence*” in the County Limerick Development Plan. Many of the residents in the local area will commute to and work in Limerick City. Economically, Limerick City is known as the hub of the Mid West Region or the Shannon Region. It is one of the main economic regions outside of Dublin and Cork. As a result, there are many employment opportunities in the city.

Enterprise Ireland, in its directory of manufacturing and internationally trading companies, lists 58 companies in the Limerick area. Approximately one third of these companies employs between 10 and 24 people, while another third employs between 25 and 49 people. Twelve companies employ between one and nine people, and eight companies employ between 50 and 99 people. One company, OMC Engineering Ltd., employs between 250 and 499 people. This company is located on the Ballysimon Road and produces semi-stainless steel and architectural stainless and mild steel products for the construction industry.

The Irish Development Agency (IDA), in its directory of overseas manufacturing and international service companies, lists 29 companies in Co. Limerick. None of these are located in the immediate vicinity of the proposed development. There are many companies including Vistakon in Plassey Park and Dell in Raheen Business Park to the west of the city and Analog in Raheen Industrial Estate to the south of the city. These workplaces are situated within an easy commuting distance from the study site. Dell currently employs approximately 3,000 people directly at its Limerick facility, and it is estimated that the company also contributes indirectly to 30,000 jobs in the Mid West region. It is the largest Dell manufacturing plant outside of the US. Vistakon Inc. is a division of Johnson & Johnson and is one of the largest contact lens manufacturing plants in the world. The only Vistakon production facility outside of the US is in Limerick City. It was announced in February 2008 that Vistakon, with the support of the IDA, would be investing €100 million in a further expansion of its manufacturing operation. This expansion was expected to create 75 extra jobs at the facility, which already employs over 600 people. Analog employs 1,300 staff and are involved with the production and design of circuits and semiconductors etc. for use in computers, cameras and electrical equipment. Aside from the companies in the city and suburbs several companies were located in the larger towns in the western half of the county. These companies are located over 30 kilometres from the waste transfer station.

The existing waste transfer station and recycling centre is a significant source of employment in the Luddenmore area, employing 220 people. In total, the company employs approximately 330 people in the Mid-West and South-East Regions.

### **4.3.3 Education**

#### **4.3.3.1 Pre-schools**

There are seven Health Service Executive (HSE) registered pre-school services in the Ballyneety/Caherconlish area servicing the area surrounding the site of the proposed development. These include childminding services and sessional pre-school services. The HSE website ([www.hse.ie](http://www.hse.ie)) defines childminding services as 'a pre-school service which may include an overnight service offered by a person who single-handedly takes care of pre-school children, including the childminder's own children, in the childminder's home for a total of more than two hours per day, except when the exemptions in Section 58 of the Child Care Act 1991 apply' and sessional pre-school service as a 'a planned programme to pre-school children for a total of not more than 3.5 hours per session. Services covered by the above definition may include pre-schools, playgroups, crèches, Montessorri pre-schools, naíonraí, notifiable childminders or similar services which generally cater for pre-school children'.

#### **4.3.3.2 Primary and Secondary Schools**

There are a number of primary schools located within the area surrounding the site of the proposed development according to the website, [www.scoilnet.ie](http://www.scoilnet.ie). The primary school located closest to the site of the proposed development is Scoil Ailbhe National School (N.S.) for boys, in Ballybricken, approximately three kilometres to the south of the site.

According to the website, [www.scoilnet.ie](http://www.scoilnet.ie), there is only one secondary school in the vicinity of the site at Luddenmore, Ard Scoil Mhuire. The majority of second level educational facilities in Co. Limerick are concentrated in Limerick City and larger centres of population such as Kilmallock.

#### **4.3.3.3 Third Level Education**

There are several third level education facilities available in the Limerick area. The University of Limerick (UL) campus is located to the east of the Limerick city, approximately eleven kilometres from the site at Luddenmore. The university has a student population of approximately 10,000 students and major areas of research include Biosciences, Environment and Bioengineering, Information and Communications Technologies, Materials and Surface Science, Work, Quality and Productivity, Humanities and Social Sciences. The UL campus also houses the primary sports science facility in Ireland.

The Limerick Institute of Technology (LIT) has approximately 6,500 students and is located to the northwest of Limerick City, approximately 14 kilometres to the northwest of the site at Luddenmore. LIT offers a wide range of fulltime courses, and is particularly strong in the areas of IT, Building Economics, Business and Engineering. LIT also incorporates the Limerick School of Art and Design.

Additional third level educational establishments in the Limerick area include Mary Immaculate College and Griffith Business School.

### **4.3.4 Services**

#### **4.3.4.1 Access and Public Transport**

##### **Road**

Limerick City is located approximately 190 kilometres from Dublin, 103 kilometres from Cork and 105 kilometres from Galway. The city is strategically located on the National Primary Road



network, with Ennis and Galway linked via the N18, Cork via the N20, Dublin via the N7 and Killarney on the N21, 23. The R512 and the R513 (Via the N24) run in a north south direction from Limerick City towards Bruff and Hospital. The waste transfer station is located on a local road between the R512 and the R513.

#### **Bus**

Bus Éireann's County Limerick service operates 9 bus routes to the rural towns and villages of county Limerick. The two bus services that operate within the study area are the Kilfinnane Route and the Galbally Route. The Closest stop on the Kilfinnane route to the waste transfer station is Ballyneety situated 2.8 kilometres North west of the site. Two buses operate daily from Monday to Friday and four buses operate on Saturday on this route. The closest stop on the Galbally route to the waste transfer is Caherconlish 3.7 kilometres north east of the site. Three buses operate daily from Monday to Friday and Two buses operate on a Saturday.

From Colbert Station near Limerick City Centre, Bus Éireann provides hourly bus services to Dublin, Ennis, Galway and Cork. Changes are possible along all routes in order to reach alternate destinations. From the bus stations in Limerick and Dublin, routes are offered to destinations throughout Ireland, and even to the UK and mainland Europe. Local services to approximately 28 destinations, including Shannon Airport, are also provided daily from Colbert Station.

#### **Rail**

The closest train station to the waste transfer station is Colbert Station in Limerick City. Colbert Station in Limerick is the third busiest train station in the country. From here, Iarnród Éireann provides a daily rail service to Cork and Dublin, as well as connecting services to other towns. In recent years, the station has undergone a complete refurbishment and upgrading, including the building of a new concourse. Limerick Junction is another major station located on the Cork/Dublin line, approximately 35 kilometres from Limerick City, for trains serving many parts of Ireland. Limerick Junction is not a terminal station but does experience a heavy traffic flow (*Source: Limerick City, A Place to Live and Work – Department of Foreign Affairs*).

#### **Air**

Shannon Airport is located approximately 31 kilometres north west of the waste transfer station. This is an international airport with many domestic flights daily, as well as flights to the UK, Europe and the USA. The airport, operated by Dublin Airport Authority, is the second busiest airport in Ireland, serving approximately 3.6 million passengers in 2007. It has been an important gateway to the West of Ireland since its establishment in 1942. Bus Éireann provides daily services from Shannon Airport to Limerick, Ennis and Galway, with further connections to Dublin, Waterford, Tralee and Killarney among others. The airlines serving Shannon Airport include Aer Lingus, Ryanair, Air France, Continental Airlines, Delta Airlines, Air Transat, Belavia and US Airways. From Shannon, there are regular daily flights to Dublin and the time taken to fly from Shannon to Dublin is 45 minutes.

Coonagh airfield is located approximately 15 kilometres north west of the proposed development site. This 60-year old airstrip is one of the oldest in Ireland and is home to Limerick Flying Club. This airfield provides access for small aircrafts.

#### **4.3.4.2 Healthcare**

There are four hospitals in the Limerick City area. The Mid-Western Regional Hospital located in Dooradoyle, provides an extensive range of medical services. Facilities include Out-Patient Department, Endoscopy Unit, Renal Dialysis, Intensive Care, Coronary Care and 12 theatres, Paediatric Unit, Accident and Emergency, Audiology and a School of Nursing. There are 426 in-patient beds and 86 day places. The Mid-Western Cancer Centre is also located on the premises. Other Mid-Western Regional Hospitals, with limited facilities, are located in Ennis and Nenagh.

St. Munchin's Regional Maternity Hospital on the Ennis Road provides colposcopy obstetric services including antenatal care, antenatal classes, counselling services, postnatal care and other maternity services for the Mid West Region. It also has a neo-natal special care baby unit and a school of midwifery.

St. John's Hospital is located at St. John's Square, close to Limerick city centre. This hospital specialises in General Medicine, General Surgery and Gynaecology, and provides a 12-hour Accident & Emergency/Minor Injuries service each day Monday to Friday.

Barrington's Hospital is a private hospital and Medical Centre located at George's Quay close to the city centre. The hospital provides a wide range of medical and surgical services.

St. Nessian's Orthopaedic Hospital is located outside the city, in Croom, Co. Limerick, approximately 15 kilometres southwest of the waste transfer station. It provides orthopaedic services for the Mid-West region, and treats approximately 2,500 patients each year. Diagnostic and treatment services are provided including orthopaedic surgery physiotherapy, radiology, hydrotherapy and orthotic/prosthetic and footwear service.

In addition to these hospitals there is a host of General Practitioners, Pharmacists, Opticians and Dentists in the city area also.

#### **4.3.4.3 Amenities and Community Facilities**

There are few local amenities and facilities in the vicinity of the waste transfer station due to its rural location. Ballybricken Church is located approximately 0.8 kilometres south of the waste transfer station. Two Churches are located in Caherconlish village 3.8 kilometres north west of the waste transfer station and another church is situated in Ballyneety Village. There is also a Garda Station in Caherconlish.

Limerick City is well served by a wide range of professional services such as accountancy firms, solicitors, architects, engineers, estate agents, banks and building societies. The city houses the principal offices of Limerick City Council and the head office of Bord na gCon. Also located in the city are the Regional Headquarters of the Army, the Garda Divisional Headquarters, the Regional Head Offices of the Electricity Supply Board, Revenue Commissioners and Irish Rail, the Area Headquarters of the District and Circuit Courts, the Land Registry, the Regional Local Office of FÁS and the Limerick District Headquarters of the Post Office. *[Source: Limerick City, A Place to Live and Work – Department of Foreign Affairs]*

Limerick City offers a diverse range of shopping options, from major stores to smaller retail units. Retail centres include the Arthur's Quay shopping centre in the city centre, the Crescent shopping centre on the Cork Road and the Parkway Shopping Centre on the Dublin Road. Limerick City Library provides library services at its city centre branch on Michael Street, and additional branches at Roxboro and Moyross. There are four Garda Stations in Limerick City. They include those at Henry Street, Mary Street, Mayorstone Park and Roxboro Road.

Limerick City is home to the Irish Chamber Orchestra, the World Music Centre, Daghdha Dance Company and the internationally renowned Hunt Museum. The Belltable Arts Centre provides a cinema, theatre and visual arts gallery, while the University Concert Hall offers concerts, theatre performances and popular national and international acts. Cinemas in the Limerick area include the Omniplex in Dooradoyle and Storm Cinema at Castletroy.

#### 4.3.4.4 Sports Facilities

Limerick County Golf & Country Club is located approximately 2.1 kilometres northwest of the proposed development site, outside the village of Ballyneety. Limerick City provides a diverse range of facilities for golf, rugby, Gaelic football and hurling, soccer, tennis, squash, horse-riding, racing, fishing and greyhound racing. Other athletics and sport facilities in the area include the University of Limerick Arena, which incorporates a 50-metre Olympic standard swimming pool and those of the National Coaching and Training Centre. In terms of water sports, Limerick also has two rowing clubs, and white-water sports are on offer at the Curragower Falls. There are two main coarse angling venues in the vicinity of Limerick City. They include Plassey, which lies adjacent to the University of Limerick campus, in Castletroy.

#### 4.3.5 Tourism

Tourism is one of the major contributors to the national economy and is a significant source of full time and seasonal employment. During 2007, total tourism revenue generated in Ireland amounted to €6.45 billion, an increase of 5.9% from €6.09 billion in 2006. Between 2006 and 2007, the number of overseas tourists to visit Ireland increased by 4%, from 7.4 million to 7.7 million. Expenditure by overseas visitors to Ireland in 2007 was estimated to be worth €4.90 billion, compared to €4.69 billion in 2006. During 2007, a total of 7.9 million trips were taken within the Republic of Ireland by Irish residents, with an associated expenditure of €1.55 billion. This represents a significant increase of 8% on the number of domestic trips taken in 2006 (7.3 million trips) while the associated expenditure rose by 11% (from €1.4 billion). (Source: Fáilte Ireland)

Limerick City is considered to be the capital of the Shannon Region, one of the seven tourism regions in Ireland. The Shannon Region is comprised of Clare, Limerick County and City, South Offaly and North Tipperary. Table 4.8 shows the total revenue and breakdown of overseas and domestic tourist numbers to each tourist region in Ireland during 2007.

**Table 4.8 Tourist Revenue and Numbers in each Region during 2007 (Source: Fáilte Ireland)**

Region	Total Revenue (€m)	No. of Tourists (000's)	Overseas Tourists (%)	Tourists from Northern Ireland (%)	Domestic Tourists (%)
Dublin	1,714.0	5,765	77.2	3.1	19.7
East & Midlands	476.2	1,934	46.1	3.7	50.2
South-East	526.9	2,134	47.7	0.5	51.8
South-West	1,280.0	3,968	51.5	0.6	47.9
Shannon	517.8	2,054	58.3	1.5	40.2
West	817.7	2,819	52.4	2.8	44.8
North-West	365.9	1,513	36.2	15.2	48.6
<b>Total</b>	<b>5,698.4</b>	<b>20,187</b>	<b>57.6</b>	<b>3.1</b>	<b>39.3</b>

During 2007, approximately 1,197,500 overseas tourists visited the Shannon Region in addition to 856,500 visitors from the Republic of Ireland and Northern Ireland. The total number of tourists to the Shannon Region increased by 2% from the previous year. The revenue generated by tourism in the Shannon region in 2007 was €517.8 million, an increase of 16.9% from €442.9 million generated during 2006. The Shannon region benefited from 10.2% of the total number of tourists to the country and 9% of the total tourism income generated in Ireland for 2006.

The proximity of Limerick City to Shannon International Airport is key feature in bringing tourism into the Shannon Region. The Limerick County Golf and Country Club is the closest tourist attraction to the waste transfer station, this is situated 2.1 kilometres to the north west. The course is an 18 hole champion standard golf course, clubhouse and restaurant. Aside from this Lough Gur is situated approximately 5.5 kilometres south of the waste transfer station. Lough Gur Neolithic settlement and stone-age visitor centre on the shores of Lough Gur is a well known tourist attraction in the study area. Limerick City itself, is also a major tourist attraction, the River Shannon is a fishing attraction, and Bunratty Castle and Folk Museum is very popular tourist destination. The Limerick Tourist Information Centre is located on Arthur’s Quay in the city centre and is open year round.

The Discover Ireland website lists 18 hotels, 12 bed and breakfasts, two guesthouses and five self-catering holiday homes in Limerick City. There are also two listed bed and breakfasts in Ballyneety on the Irish Tourists website. It is likely that there are also more unregistered or seasonal accommodation facilities available in the area.

#### 4.3.6 Land Use

The dominant land use in the area is pastoral agriculture, with 76.7% of land within the Study Area being farmed and 399 farms in total in the Study Area, according to the 2000 Census of Agriculture. There is an average farm size of 26.9 ha. This is slightly Lower than the average for County Limerick at 32.6 ha. Crop tillage comprises a very low proportion of farmland (1.1%). Pasture makes up the highest land use at 55.3% and 27.9% of lands used for silage. 8.7% of lands are used for rough grazing and only 5.3% of lands are cut for hay. Details of the farm type and area they cover are shown in Table 4.9.

**Table 4.9 Farm type, area and composition in Study Area**

	Study Area	% of Area Farmed
<b>Total Area Farmed</b>	13,427 ha	
<b>Farmland as a % of Study Area</b>	76.7%	
<b>Total Number of Farms</b>	399	
<b>Total Cereals</b>	0 ha	0
<b>Fruit &amp; Crops</b>	50 ha	0.37
<b>Total Hay</b>	716 ha	5.33
<b>Pasture</b>	8,221 ha	61.22
<b>Rough Grazing</b>	137 ha	1.02
<b>Total Silage</b>	3,831 ha	28.53

With the exception of the existing transfer station itself; the land use in the immediate vicinity of the proposed works fits this rural profile with rolling fields of pastoral agriculture divided with hedges and small woodlands

## 4.4 Likely and Significant Impacts on Human Beings and Associated Mitigation Measures

### 4.4.1 ‘Do Nothing’ Impact

If the proposed increase in tonnage was not permitted, it is likely that operations would continue as they are at present with the continued employment of 220 people at the site. Waste recycling and diversion from landfill targets would remain at present levels and an opportunity would be lost to increase recycling rates and reduce the amount of waste going to landfill.

#### 4.4.2 Impacts during Construction Phase

##### **No Impact**

As this is an environmental impact assessment of the proposed increase in waste tonnage accepted at the facility, no construction phase is anticipated.

#### 4.4.3 Impacts during Operational Phase

##### **Long Term Moderate Positive Impact**

It is anticipated that the proposed increase in throughput of the plant will result in the creation of five permanent positions within the company. Increase in tonnage will secure the future of this business in the area, thereby securing the jobs of the 220 people that work on site and the 330 that work for the company in the wider region.

##### **Long Term Moderate Positive Impact**

The consolidation of employment will result in the consolidation of the population around the site by securing jobs in the region.

##### **Long Term Minor Negative Impact**

Traffic associated with increased throughput of the plant is likely to impact to some extent on road users in the area.

A full assessment of the traffic impact is detailed in Chapter 11 of the EIS.

##### **Long Term Minor Negative Impact**

Odour, dust and windblown material associated with the proposed increase in throughput of the plant may impact on the local area. However, there are existing odour and dust control systems in place.

A full assessment of Odour and dust is included in Chapter 8 of this EIS.

##### **Long-term potential significant negative impact**

The volume of machinery and equipment used for the operation of the site pose a potential health and safety hazard to workers if site rules are not properly implemented.

##### **Mitigation**

All site staff are aware of and adhere to the company Health and Safety Statement. At present there are eight people trained in first aid, five people trained to use a defibrillator and one Health & Safety Manager at the waste transfer station. The full Health and Safety Statement for the facility is available as Appendix IV of this document.

## 5. Flora and Fauna

### 5.1 Flora and Fauna in the Existing Environment

This section is based on field visits made in November 2008 when the waste transfer station site was surveyed extensively and surrounding habitats were assessed. The survey work was carried out by two ecologists, from the staff of McCarthy Keville O'Sullivan Ltd. Fauna were surveyed through direct observation of bird and mammal species or of their signs and calls. Habitat suitability was also assessed for the likely occurrence of other species, which would not be present due to seasonal factors.

#### 5.1.1 Methodology and Limitations

The flora and habitats of the site were assessed by means of a desk study of literature pertinent to the site and surrounding area and by field surveys of the site including a survey of flora, bird surveys and general observation work.

Seasonal factors that affect distribution patterns and habits of species were taken into account when conducting the surveys and the potential of the site to support certain populations (in particular those of conservation importance that may not have been recorded during the field survey due to their seasonal absence or cryptic nature) was assessed.

##### 5.1.1.1 Field Study

A field visit was made to the site on the 19<sup>th</sup> of November 2008. The habitats present at the site were mapped and observations of plants, mammals/mammal signs and birds within the site were made throughout the study period.

Due to the lack of habitat diversity within the site, the use of relevés to evaluate percentage vegetation cover was not deemed necessary. Similarly, it was considered that (due to the low avifaunal diversity of the site) bird sampling techniques such as those recommended by Bibby *et al.* (2000) were not necessary. The site was instead systematically and thoroughly walked, habitats were assessed, classified and sketched on to field maps of the site. All bird species observed or heard within the site were recorded and the presence (or signs) of mammals, amphibians and reptiles was noted during the visit.

A limitation of the survey was the time of year the fieldwork was completed. Summer is usually the most appropriate time of year for ecological surveys, though even in summer some wintering species may not be recorded. Ideally surveys should be carried out in all seasons but this was not considered necessary for this site as it was felt that the habitats on the site could be identified during the Winter survey and a good estimation of baseline environmental conditions on the site could be achieved.

## 5.2 Published Information

### 5.2.1 Background to Designated Sites

With the introduction of the EU Habitats Directive (92/43/EEC) which was transposed into Irish law as the Natural Habitats Regulations, 1997, the European Union formally recognised the significance of protecting rare and endangered species of flora and fauna and also, more importantly, their habitats. Member states were directed to provide lists of sites for designation.

### **Natural Heritage Areas**

Natural Heritage Areas (NHAs) are sites that were designated for the protection of flora, fauna, habitats and geological sites of national importance. Management of NHAs is guided by planning policy and the Wildlife (Amendment) Act 2000. It was from these NHAs that the most important sites were selected for international designation as SACs and SPAs.

### **Special Areas of Conservation and Special Protection Areas**

There are two types of EU site designation, the Special Area of Conservation (SAC) and the Special Protection Area (SPA). SACs are designated for the conservation of flora, fauna and habitats of European importance and SPAs for the conservation of bird species and habitats of European importance. These sites form part of "Natura 2000" a network of protected areas throughout the European Union.

Annex I of the Habitats Directive lists certain habitats that must be given protection. Certain habitats are deemed 'priority' and have greater protection. Irish habitats include raised bogs, active blanket bogs, turloughs, heaths, lakes and rivers. Annex II of the directive lists species whose habitats must be protected and includes Lesser Horseshoe Bat, Otter, Salmon and White-clawed Crayfish.

## **5.2.2 Sources of Information**

The following sections detail the sources of published material that were consulted as part of the desk study for the purposes of the Environmental Report. These included the synopses of sites designated for their conservation importance compiled by the National Parks and Wildlife Service (NPWS) of the Department of the Environment, Heritage and Local Government (DoEHLG), bird and plant distribution atlases and other research publications.

### **5.2.2.1 Designated Areas**

The National Parks and Wildlife Service publish synopses of the information regarding areas designated for conservation. The only designated area located within five kilometres of the waste transfer station site was Skoolhill NHA (Site Code 001996). Skoolhill NHA is situated three kilometres south west of the waste transfer station site. The full NPWS site synopsis for this designated area is shown below.

*Skool Hill is situated in Grange in Co. Limerick. Two woodlands occur here, with a mixture of native tree species such as ash, hazel, hawthorn and oak as well as exotics like beech and sycamore. The ground vegetation in the woods is quite sparse, with ivy, bramble, ferns and hogweed present.*

*Rough grassland exists on the hill outside the woods, with quite a natural vegetation present around the limestone rock outcrops. Plants such as yarrow, knapweed and self-heal are found there.*

*This site is the only known location in Ireland of the grass *Festuca heterophylla*. This was discovered here in 1977 and has still not been recorded elsewhere in Ireland.*

The locations of the waste transfer station site and this designated site are shown in Figure 5.1.

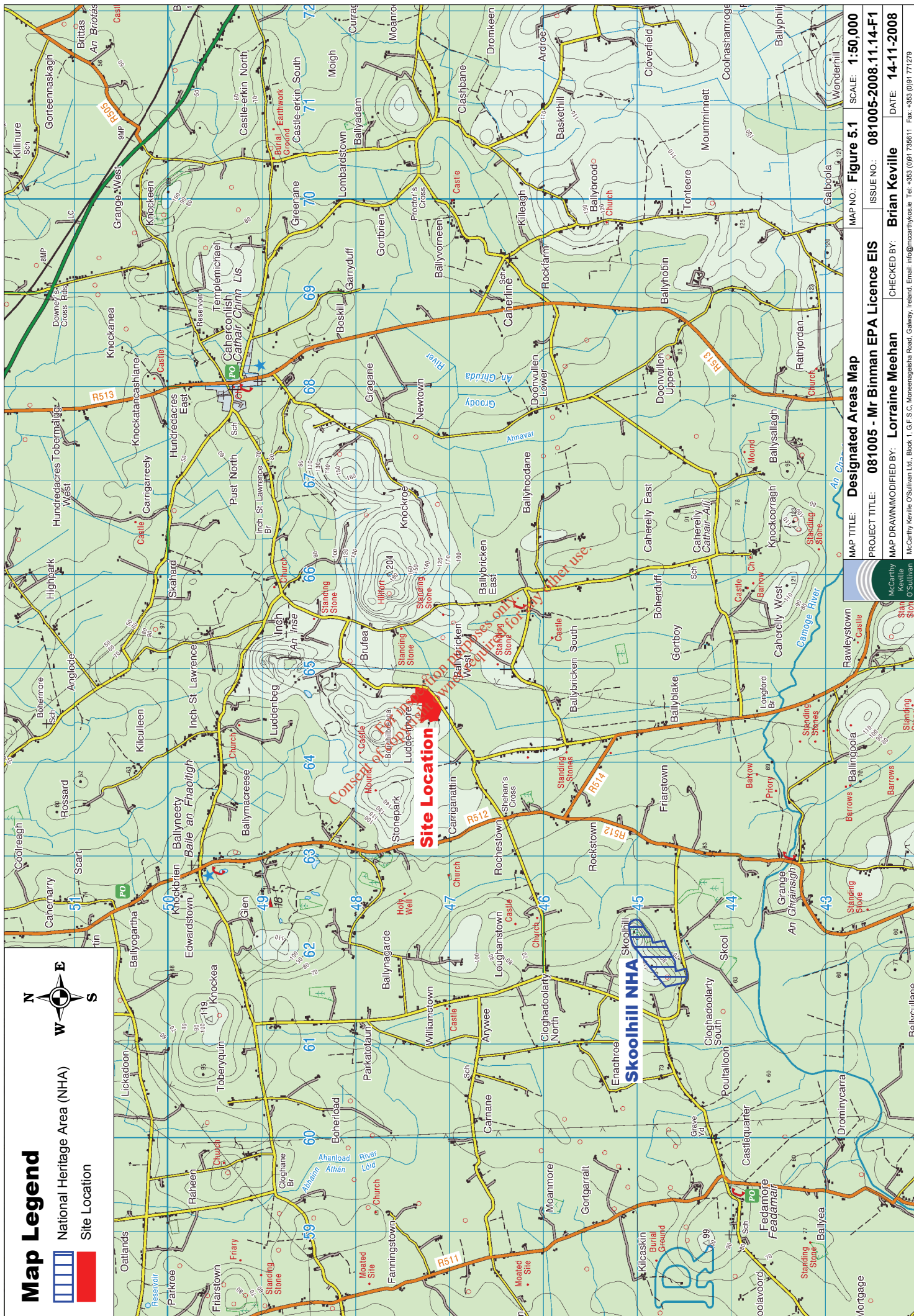
### **5.2.2.2 New Flora Atlas**

A search was made in the *New Atlas of the British & Irish Flora* (Preston *et al.*, 2002) to find out if any rare or unusual plant species had been recorded in the ten kilometre square R64 (within which

# Map Legend

National Heritage Area (NHA)

Site Location



MAP NO.: <b>Figure 5.1</b>	SCALE: <b>1:50,000</b>
PROJECT TITLE: <b>081005 - Mr Binman EPA Licence EIS</b>	ISSUE NO.: <b>081005-2008.11.14-F1</b>
MAP DRAWN/MODIFIED BY: <b>Lorraine Meehan</b>	CHECKED BY: <b>Brian Keville</b>
DATE: <b>14-11-2008</b>	

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the waste transfer station site is located) during the 1987 – 1999 atlas survey carried out by the Botanical Society of the British Isles (BSBI). The search included the vascular plants that are listed in Annex II of the EU Habitats Directive and the Flora (Protection) Order of 1999. No species listed in Annex II of the Habitats Directive were recorded in R64 during the survey and the only species listed in the Flora Protection Order that was recorded, was Round Prickly-headed Poppy (*Papaver hybridum*).

All of the records for Round Prickly-headed Poppy in the atlas were recorded before 1986. This plant is found in arable habitats and disturbed areas and is restricted to calcareous soils.

### 5.2.2.3 Breeding Bird Atlases

The principal published sources of information regarding the distribution of breeding birds in Ireland are 'The Atlas of Breeding Birds in Britain and Ireland' (Sharrock, 1976) and 'The New Atlas of Breeding Birds in Britain and Ireland: 1988-1991' (Gibbons *et al.*, 1993). Similarly, 'The Atlas of Wintering Birds in Britain and Ireland' (Lack, 1986) is the most comprehensive work on wintering birds in Ireland. However, it should be remembered that, for some species at least, more recent work has been carried out.

These atlases show data for breeding and wintering birds respectively in individual 10 km by 10 km squares. Table 5.1 shows those species found in the relevant ten-kilometre square, R64, which are recorded in the Breeding Birds atlases and are also protected under the EU Birds Directive or mentioned on the Birds of Conservation Concern in Ireland (BoCCI) red list. Birds listed under Annex I are offered special protection by the EU Birds Directive. Those listed on the BoCCI red list meet one or more of the following criteria:

- Their breeding population or range has declined by more than 50% in the last 25 years
- Their breeding population has undergone significant decline since 1900
- They are of global conservation concern

Table 5.1 Breeding Bird Atlas Data (R64)

Common Name	Scientific Name	Breeding Atlas 68-72	Breeding Atlas 88-91	Annex I	BoCCI red list
Corncrake	<i>Crex crex</i>	Possible Breeding	Present no Breeding Evidence	Yes	Yes
Lapwing	<i>Vanellus vanellus</i>	Probable Breeding	Present no Breeding Evidence	No	Yes
Curlew	<i>Numenius arquata</i>	Possible Breeding	Present no Breeding Evidence	No	Yes
Yellowhammer	<i>Emberiza citrinella</i>	Probable Breeding	Present no Breeding Evidence	No	Yes
Kingfisher	<i>Alcedo atthis</i>	Confirmed Breeding	-	Yes	No
Redshank	<i>Tringa totanus</i>	Confirmed Breeding	Present no Breeding Evidence	No	Yes
Shoveller	<i>Anas clypeata</i>	Possible Breeding	Present no Breeding Evidence	No	Yes
Peregrine	<i>Falco peregrinus</i>	Centred Record	Centred Record	Yes	No
Hen Harrier	<i>Circus cyaneus</i>	Possible Breeding	Breeding Evidence	Yes	No

- not recorded

Four species listed under Annex I of the EU Birds Directive have been recorded within the relevant ten-kilometre square in the Atlas of Breeding Birds; they are Corncrake, Kingfisher, Peregrine and Hen Harrier. Corncrake distribution has declined dramatically throughout Ireland in recent times. The decline of this species is largely attributed to earlier cutting of grass, which is associated with

modern farming practices. This bird is known to breed in damp hay meadows (with tall grasses) and wet marshland. According to the 1993 Birdwatch Ireland/RSPB Corncrake Census Survey there has been an 80% decline in the population since the last atlas survey in 88-91. According to this study corncrakes are concentrated in four main areas these are the Moy Valley Co. Mayo, the Shannon Callows in the Midlands, North Donegal and the Erne Catchment in Fermanagh. Corncrakes are thus unlikely to occur at this site in Co. Limerick.

Kingfisher were recorded in the square but are very unlikely to occur at the waste transfer station site as no standing water is present. Kingfisher are never found far from water as they feed on fish. The records for Peregrine are centred in order to protect these birds from persecution during their breeding season. For this reason it is unknown whether Peregrine have been recorded in R64 or not. Peregrine breeds on cliffs on the coast or inland, and are unlikely to occur at the waste transfer station site. Hen Harrier breed predominantly in heather dominated areas and in young conifer plantations in Ireland and are unlikely to occur on the waste transfer station site due to unsuitable habitat.

The following birds have all have also been recorded in the Atlases of Breeding Birds and are included on the BoCCI red list; Redshank, Curlew, Lapwing, Yellowhammer and Shoveller. Redshank breed on marshland, wet meadows and heath and are unlikely to occur on the waste transfer station site. Curlew breed in a variety of habitats including bogs, arable fields and maritime grassland. Lapwing breeds on grassland habitats, preferring rough grassland or arable fields, which offer some cover. These birds are unlikely to occur at the waste transfer station site. Yellowhammer have a preference for arable habitats with some scrub or hedgerow, and are unlikely to occur at the waste transfer station site. Shoveller are known to breed on lakes that are shallow, eutrophic and have an abundance of waterweed. No lakes were situated within 5 kilometres of the waste transfer station site.

In terms of wintering birds, Table 5.2 shows those species found in the ten-kilometre square R64 that are recorded in the Atlas of Wintering Birds in Britain and Ireland 1988-91 and are also protected under the EU Birds Directive or mentioned on the Birds of Conservation Concern in Ireland (BoCCI) red list.

**Table 5.2 Wintering Bird Atlas Data (R64)**

Common Name	Scientific Name	Numbers	Annex I	BOCCI red list
Golden Plover	<i>Pluvialis apricaria</i>	496+	Yes	No
Lapwing	<i>Vanellus vanellus</i>	435-1500	No	Yes
Curlew	<i>Numenius arquata</i>	41-209	No	Yes
Yellowhammer	<i>Emberiza citrinella</i>	1-25	No	Yes
Shoveler	<i>Anas clypeata</i>	35+	No	Yes
Black-headed Gull	<i>Larus ridibundus</i>	1-380	No	Yes
Herring Gull	<i>Larus argentatus</i>	1-70	No	Yes
Whooper Swan	<i>Cygnus cygnus</i>	10-32	Yes	No
Peregrine	<i>Falco peregrinus</i>	1	Yes	No

Three birds recorded as wintering in the relevant ten-kilometre square are protected under Annex I of the EU Habitats Directive: Golden Plover, Whooper Swan and Peregrine. Golden Plover have a preference for feeding on arable pasture during winter; and may occur at the waste transfer station site. Whooper Swans use a variety of habitats from small lakes and ponds to agricultural land, turloughs and intertidal areas where they graze on grass and winter cereals and may occur at the waste transfer station site. Peregrine occur in a wide variety of habitats in winter and may be found in the vicinity of the waste transfer station site.

Six birds listed on the BoCCI red list are recorded as wintering in the relevant ten-kilometre square (R64); these were Shoveller, Black-headed Gull, Herring Gull, Lapwing, Curlew and Yellowhammer. Shoveller usually winter on shallow eutrophic lakes, no lakes are located in the vicinity of the waste transfer station site. Black-headed Gulls winter in a wide variety of habitats including urban areas, agricultural land, arable land and coastal habitats. Herring Gulls are concentrated in coastal area and densely populated areas during the winter. Both Black-headed Gulls and Herring Gulls may use the site during the winter. Lapwing and Curlew potentially use the waste transfer station site during winter. Yellowhammer have a preference for arable land with some scrub or hedgerow. These habitats were not recorded at the proposed development site.

### 5.2.3 NPWS Records

The NPWS records of protected species in the area of the proposed development were obtained for the relevant ten-kilometre square. Round Prickly-headed Poppy (*Papaver hybridum*) was the only species recorded in the relevant ten-kilometre square.

### 5.2.4 Consultation

A scoping report providing details of the proposal, the waste transfer station site and the methodology to be employed in surveying the site, was prepared by McCarthy, Keville, O'Sullivan Ltd. and sent to a number of consultees for comment. The consultees included the Development Application Unit of the National Parks & Wildlife Service, An Taisce, Shannon Regional Fisheries Board and the Heritage Officer for Limerick County Council. Section 2 of this report provides further details of the scoping and consultation carried out as part of this assessment.

No scoping replies relevant to the ecology of the site had been received as of December 19<sup>th</sup> 2008.

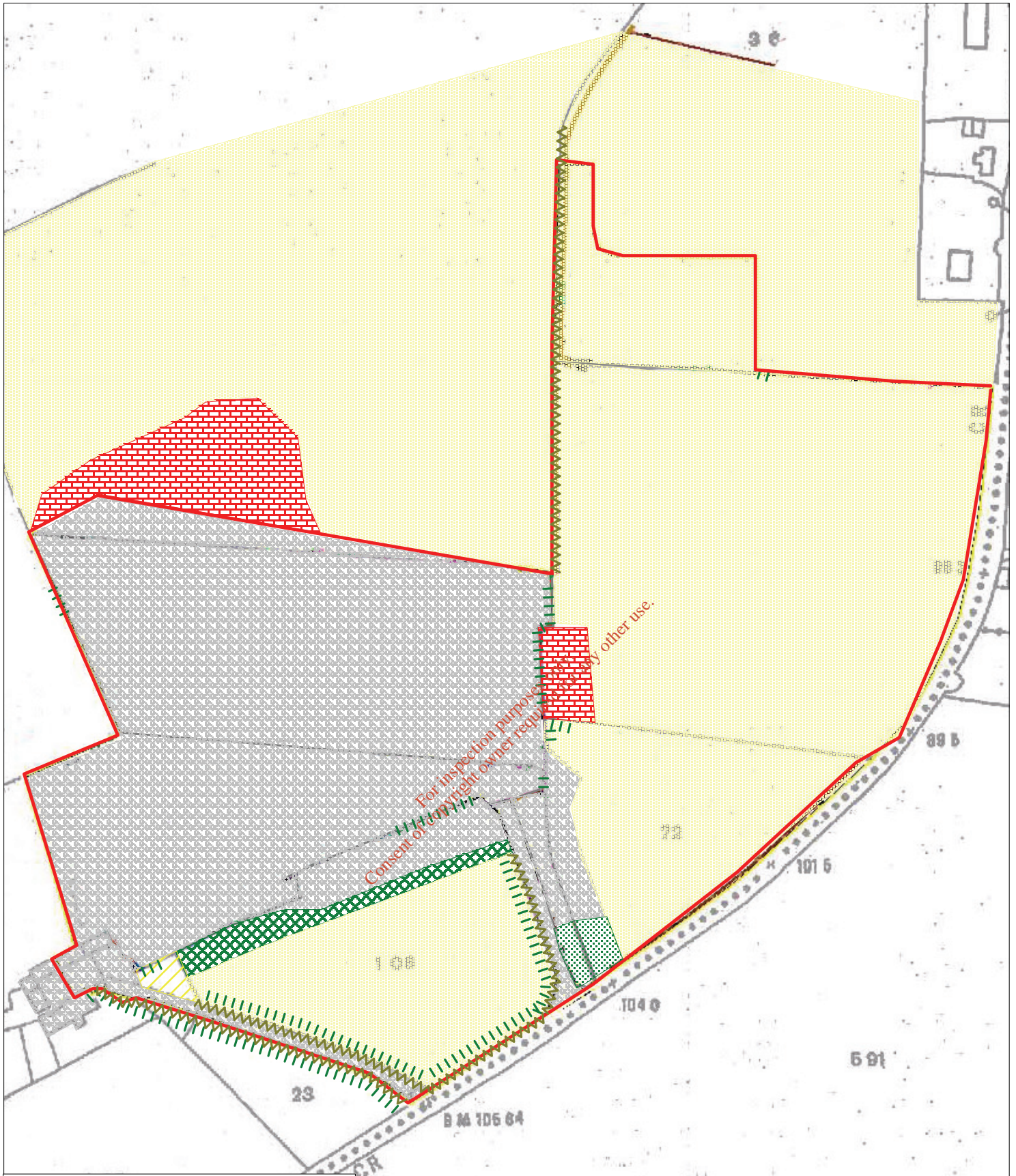
## 5.3 Flora in the Existing Environment

### 5.3.1 Habitats Present

Habitats present on the waste transfer station site were classified according to the guidelines set out in 'A Guide To Habitats in Ireland' (Fossitt, 2000). The habitats present are shown on a Habitat Map, Figure 5.2. The habitats recorded on or adjacent to the waste transfer station site are listed below. The habitat names are followed by their corresponding habitat reference code (in brackets).

Buildings and Artificial Surfaces (**BL3**)  
Hedgerows (**WL1**)  
Treelines (**WL2**)  
Spoil and Bare Ground (**ED2**)  
Improved Agricultural Grassland (**GA1**)  
Amenity Grassland (**GA2**)  
Ornamental Scrub (**WS3**)  
Mixed Broadleaf Woodland (**WD1**)


The site covers a total area of approximately 7.0 hectares and is bounded on the southern side by an existing local road which eventually joins with the R512 to the west and the R513 to the east. The site is located approximately eleven kilometres south east of Limerick City. The land use surrounding the site is primarily agricultural although a large quarry is present to the north east of the site.



## Map Legend

- Site Boundary
- Buildings & Artificial Surfaces (BL3)
- Hedgerow (WL1)
- Treeline (WL2)
- Spoil & Bare Ground (ED2)
- Improved Agricultural Grassland (GA1)
- Amenity Grassland (GA2)
- Ornamental Scrub (WS3)
- Mixed Broadleaf Woodland (WD1)



	MAP TITLE: <b>Habitat Map</b>	MAP NO.: <b>Figure 5.2</b>	SCALE: <b>1:2,000</b>
	PROJECT TITLE: <b>081005 - Mr Binman EPA Licence EIS</b>	ISSUE NO.: <b>081005-F1</b>	
	MAP REQUESTED BY: <b>Jen Fisher</b>	CHECKED BY: <b>Corina O'Sullivan</b>	DATE: <b>28-11-2008</b>
	<small>McCarthy Keville O'Sullivan Ltd., Block 1, G.F.S.C. Moneenageisha Road, Galway, Ireland. Email: info@mccarthykos.ie Tel: +353 (0)91 735611 Fax: +353 (0)91 771279</small>		

### **Buildings & Artificial Surfaces (BL3)**

Approximately half of the site is dominated by what has been classified as buildings and artificial surfaces. These are the buildings associated with the existing waste transfer station and associated offices. The majority of these buildings are composed of corrugated walls and roofs and are surrounded by hard standing areas or areas of compacted gravel. The roads leading into the site has also been classified as buildings and artificial surfaces (see plates 5.1 & 5.2).

### **Improved Agricultural Grassland (GA1)**

The fields surrounding the Mr. Binman waste transfer station have been classified as Improved Agricultural Grassland (Plate 5.3). Some of these fields were being grazed by cattle at the time of the field visit and many areas were heavily poached. This habitat was dominated with species such as Perennial Rye Grass (*Lolium perenne*) with several other grass species present, including Cocksfoot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*) Fescues and Bents. Among the grasses were herbs typical of agricultural land, including Creeping Buttercup (*Ranunculus repens*), White Clover (*Trifolium repens*), Ribwort Plantain (*Plantago lanceolata*), Common Mouse-ear (*Cerastium fontanum*), Daisy (*Bellis perennis*) and Dandelion (*Taraxacum officinale*). These fields were flat, with a short sward, and had very low numbers and diversity of herbs.

### **Amenity Grassland (GA2)**

A small area in the south western portion of the site in the vicinity of the offices has been classified as amenity grassland. The grass in this area was maintained as short sward.

### **Hedgerows (WL1) and Treelines (WL1)**

The perimeter of the field to the south of the waste transfer station has been planted with a beech hedgerow. This hedgerow was well managed, stockproof and approximately 1.5 metres high. No other species were recorded in this hedgerow. Inside this hedgerow adjacent to the two entrance roads a line of immature trees have been planted composed of Sweet Chestnut (*Castanea vesca*) and Ornamental Maple (*Acer sp.*). A line of mature Sycamore (*Acer pseudoplatanus*) was present to the south of this field. (Plate 5.3) Another treeline of semi-mature Ash (*Fraxinus excelsior*) was present within the southern section of the waste transfer station. A second hedgerow was recorded on the northern section of the site; species such as Hawthorn (*Crataegus monogyna*), Gorse (*Ulex europaeus*), Ivy (*Hedera helix*) Bramble (*Rubus fruticosus*) and Blackthorn (*Prunus spinosa*) were all recorded within this hedge.

### **Mixed Broadleaf Woodland (WD1)**

A narrow strip of immature to semi-mature woodland was situated to the south of the waste transfer station (Plate 5.4). The woodland was mainly composed of non native species such as Cherry laurel (*Prunus laurocerasus*), Sweet Chestnut (*Castanea vesca*), Eucalyptus (*Eucalyptus sp.*), Horse Chestnut (*Aesculus hippocastanum*), Beech (*Fagus sylvatica*) and Berberis (*Barbaris sp.*). Some native species such as Holly (*Ilex aquifolium*) and Alder (*Alnus glutinosa*) were also present within the woodland. The width of this strip of woodland varied between 4 and 8 metres. This woodland was an effective screen for the existing waste transfer facility.

### **Ornamental Scrub (WS3)**

A small patch of habitat adjacent to the main site entrance has been classified as Ornamental Scrub. This habitat was dominated by non-native Cherry Blossom (*Prunus sp.*) trees (Plate 5.5).

### **Spoil & Bare Ground (ED2)**

A large heap of aggregate material was situated to the east of the waste transfer station towards the middle of the site. This spoil appeared to have been deposited recently and no plants were recorded in this habitat. This material will be used in the construction of the new entrance roadway for which planning permission has been granted by Limerick County Council. A second area immediately north west of the site has also been classified as spoil and bare ground.

**Plates**



**Plate 5.1. Showing some of the buildings and hard standing on the site.**



**Plate 5.2. A view of the site from the north facing south, showing the existing buildings.**



Plate 5.3. Showing an area of improved agricultural grassland and some of the hedgerows and treelines on the site.



Plate 5.4. Showing the linear strip of woodland to the south of the waste transfer station.



Plate 5.5. Showing the main entrance road and an adjacent patch of ornamental scrub.

### 5.3.2 Species Present

A full list of the vascular plant species recorded during the site visits is presented in Appendix II to this report. None of the species that were recorded on the site visit are considered to be of conservation importance. The only Flora Protection Order species found in square R64 during the 1987-1999 BSBI plant atlas survey was Round Prickly-headed Poppy (*Papaver hybridum*). This plant is found in arable habitats and disturbed areas and is restricted to calcareous soils. This plant has not been recorded in R64 since before 1986.

### 5.3.3 Character of Habitats

The site contains a number of habitats as outlined above. A large portion of the site is made up of the buildings and hard standing areas associated with the existing waste transfer station. The majority of the remainder of the habitats are not in their natural state, having been altered or created by agricultural management. Some of the habitats on site are grasslands that has been improved and regularly re-sown, these habitats were being grazed by livestock at the time of the field visit. The hedges and treelines add some habitat diversity, giving character to individual fields and a sheltered feel to the southern section of the site. The linear strip of woodland screens of the waste transfer station and reduces visibility to the south. The wider area has a rural character and the surrounding land use is predominantly agricultural.

### 5.3.4 Significance of Habitats

None of the habitats recorded on the waste transfer station site are protected under Annex I of the EU Habitats Directive. The site consists primarily of buildings & artificial surfaces, improved



agricultural grassland and spoil & bare ground. These habitats are not considered to be of high value for wildlife and are plentiful in the local area. The woodland, hedgerows and treelines improve the site for wildlife providing shelter for birds and possibly mammals. The vast majority of the trees recorded were however of non-native varieties; non-native trees are known to support fewer species than native varieties.

### 5.3.5 Fauna in the Existing Environment

#### 5.3.5.1 Birds

Table 5.8 below shows the 17 bird species recorded within the site during the site visit on the 19<sup>th</sup> of November 2008. Records were taken of bird species seen or heard. The bird species recorded were typical of the habitat types found on the site, hedgerows, treelines and agricultural land. Of the bird species recorded on the field visit, none are mentioned on Annex I of the EU Bird Directive or listed on the Birds of Conservation Concern in Ireland (BoCCI) red list. The only BoCCI Amber listed species recorded was House Sparrow. This species has been newly added to the Amber list due to a decline of more than 25% in population. Amber listed species are birds of medium conservation concern in Ireland. However, this species is still widespread here.

**Table 5.8 Bird species recorded within the site during visit**

Common Name	Scientific Name	Conservation Status
Blackbird	<i>Turdus merula</i>	Green Listed
Blue Tit	<i>Parus caeruleus</i>	Green Listed
Chaffinch	<i>Fringilla coelebs</i>	Green Listed
Coal Tit	<i>Parus ater</i>	Green Listed
Goldcrest	<i>Regulus regulus</i>	Green Listed
Goldfinch	<i>Carduelis carduelis</i>	Green Listed
Great Tit	<i>Parus major</i>	Green Listed
Greenfinch	<i>Carduelis chloris</i>	Green Listed
House Sparrow	<i>Passer domesticus</i>	Amber Listed
Jackdaw	<i>Corvus monedula</i>	Green Listed
Magpie	<i>Pica pica</i>	Green Listed
Pied Wagtail	<i>Motacilla alba yarrelli</i>	Green Listed
Redwing	<i>Turdus iliacus</i>	Green Listed
Robin	<i>Erithacus rubecula</i>	Green Listed
Rook	<i>Corvus frugilegus</i>	Green Listed
Woodpigeon	<i>Columba palumbus</i>	Green Listed
Wren	<i>Troglodytes troglodytes</i>	Green Listed

#### 5.3.5.2 Mammals

No mammalian species were observed within the site during the site visit. In addition no Tracks, Signs or calls were recorded. It is likely that some mammal species such as Badger (*Meles meles*) Fox (*Vulpes vulpes*), Irish Hare (*Lepus timidus hibernicus*), Rabbit (*Oryctolagus cuniculus*), Wood Mouse (*Apodemus sylvaticus*), Pygmy Shrew (*Sorex minutus*), Brown Rat (*Rattus norvegicus*), and Stoat (*Mustela erminea*) may be present, at least on occasion.

No dedicated bat detector surveys were carried out on site and no searches of attic spaces and tree cavities were performed during the field visit. These surveys were not deemed necessary as no trees are to be removed and no buildings are to be demolished or renovated as a result of the proposed increase in tonnage. Bats may use the site for roosting and foraging or may commute through the site. All bats are protected under Annex IV of the EU Habitat Directive with the exception of Lesser Horseshoe Bats (*Rhinolophus hipposideros*), which are protected under Annex II. None of the buildings in use for the storage or processing of waste material appeared to be

suitable as roost sites for bats. These sheds were large open buildings with corrugated roofs. The adjacent office buildings and some of the mature trees on site may provide suitable habitation for bats. The site itself is quite open and unlikely to provide major foraging or commuting habitats for bats. However bats may forage along the treelines and hedgerows.

### **5.3.6 Species of conservation importance that potentially use the site or may be impacted by the proposed development**

The site offers potential bat feeding habitats and commuting routes. In addition several of the trees on site are mature enough to contain cavities suitable for roosting bats. Bats may also roost in the office buildings adjacent to the waste transfer buildings. Bats are likely to feed and commute along the hedgerows on the waste transfer station site. All Bats are protected under Annex IV of the EU Habitats Directive, except Lesser Horseshoe Bat, which is protected under Annex II. The conditions on site do not appear suitable for Lesser Horseshoe Bats since they prefer closed canopy woodland habitats. It should be noted that the existing waste transfer station can be lit up at night. The lights may deter the bats in the area and may prevent bats using the site for foraging or roosting. Since none of the buildings or trees suitable for bats on site will be altered or removed as a result of the proposed increase in tonnage an impact on bats is not anticipated.

Irish Hare is likely to occur on the site and is listed in Annex V of the EU Habitats Directive and in Appendix III of Bern Convention (Council of Europe, 1979). The Irish population is also listed in the Irish Red Data Book as being of international importance (White, 1993). This hare is the Irish subspecies of the Mountain Hare, which has a circumpolar distribution. Irish Hare are found in many habitats in Ireland from the coast and dune systems, all types of pasture and peatlands to heather moorland. Although there is no reliable estimate of the Irish population of this species (Hayden and Harrington, 2000), it is widespread and frequently encountered.

### **5.3.7 Significance of the Fauna**

None of the species recorded on site are protected under Annex II of the EU Habitat Directive. The majority of the site consists of buildings & artificial surfaces, agricultural land and spoil & bare ground, these habitats are unlikely to support a fauna of high ecological significance.

It is possible that the mature trees and old buildings on site provide suitable roosting habitat for bats. All Bats are protected under Annex IV of the EU Habitats Directive, except Lesser Horseshoe Bat, which is protected under Annex II.

## **5.4 Likely and Significant Impacts on Flora and Fauna and Associated Mitigation Measures**

### **5.4.1 'Do Nothing' Impact**

If the proposed development does not go ahead it is likely that the waste transfer facility and recycling centre will continue to operate as usual, accepting waste up to 105,000 tonnes per annum. Some of the Agricultural areas will be developed into a new entrance road and car park (as per planning ref no. 05/3728 and 07/2466). The remaining agricultural areas will continue to be grazed by cattle and managed following much the same regime as is currently applied, with continued fertilizer application. This being the case, the grassland habitat is unlikely to alter type or species composition. Most of the hedgerows around the site are likely to remain at least in the medium term. The fauna of the site is likely to remain largely as it is at present.

## 5.4.2 Impacts during Construction Phase

As this is an environmental impact assessment of the proposed increase in waste tonnage accepted at the facility, no construction phase is anticipated.

## 5.4.3 Impacts during the Operational Phase

### 5.4.3.1 Impacts on Flora and Fauna

#### Permanent Neutral Impact

No net loss of habitat will occur as a result of the proposed development.

#### Mitigation

No mitigation prescribed.

#### Long-term Slight Negative Impact

The proposed development will increase traffic and activity in the area, thus increasing disturbance of wildlife including birds and mammals using the site and adjacent areas. However as the waste transfer station site is already subject to moderate volumes of traffic, this impact is considered to be slight.

#### Mitigation

No mitigation is prescribed. However there are similar habitats in the local area to allow for migration of more sensitive species.

### 5.4.3.2 Impacts on Water Quality

#### Short-term Moderate Negative Impact

The increased use of vehicles (associated with the increase in tonnage) at the waste transfer facility increases the potential for the spillage of fuel and oil on the site either from leaks from vehicles or fuel tanks or spillages. These substances may leach down into the soil, subsoil and groundwater and eventually contaminate surface waters.

#### Mitigation

All vehicles used for transport and collection of waste will be checked and maintained to avoid leaks of fuel, lubricants etc. Best practice for machinery management and maintenance will be adopted. Fuel is stored in a bunded fuel tank, which is located in a bunded concrete area. Access to the fuel tank can only be achieved through the use of a key and a code. The bunded fuel storage area is covered to prevent excess water collecting inside the bund. Any water that does accumulate inside the bund is removed off-site for further treatment, as necessary. The loading/unloading area, beside the bunded tank is surrounded by a interceptor grate in the ground, which drains to the hydrocarbon interceptor in the event of a small spill when filling a truck with fuel. This hydrocarbon interceptor is a Klargester NS 200 Class 1 full retention separator and built-in silt trap, and is the best available unit on the market.

#### Potential Short-term Significant Impact

The increase in tonnage will lead to an increased surface water run-off collected from the yard, e.g. from the washing down of vehicles and skips. This wastewater could have a significant negative impact on groundwater or surface water if discharged untreated.

#### Mitigation

All surface water run-off from the yard will continue to be discharged to the hydrocarbon interceptor located at the eastern boundary of the site. Since there are no watercourses draining

the site, or in the immediate vicinity of the site, the likelihood of significant negative effects on local surface water is very low.

The surface of the yard and truck parking area is concreted. All surface water is drained from this concreted area to the percolation area via the hydrocarbon interceptor. Clean roof run-off is directed to a soak pit. The main entrance to the yard is concreted and surface water from this area is drained to soak pits at the side of the entrance.

As part of the EPA licence review application, Mr. Binman Ltd. also proposes to seal all joints on hard-standing areas to further ensure there will be no impact on groundwater.

Foul water from the transfer station (e.g. from the toilets and canteen) is drained to the onsite wastewater treatment plant. At present, there are no discharges to ground from the treatment plant. The wastewater is collected from the onsite plant, and brought to Castletroy Wastewater Treatment Plant for further treatment. There will be no discharges from the onsite wastewater treatment plant emission point until such time as it can be demonstrated that it is operating in compliance with the emission limit values. Foul water will be treated in the wastewater treatment plant to a standard of 20 mg/l BOD and 30 mg/l suspended solids.

In order to assure compliance with the emission limit values of the facility's EPA Waste Licence, an onsite laboratory has been set up and a full-time Environmental Analyst employed. The roles of the Environmental Analyst include the development and implementation of standard operating procedures for the sampling and monitoring of the wastewater treatment plant, stormwater, groundwater, dust and noise and all other environmental checks that are required to ensure full compliance with licence conditions. The establishment of a laboratory onsite aims to improve plant operation and control, as daily monitoring data is available to allow changes to be made to the plant on a daily basis.

Further details on water and water quality are available in Chapter 7 of this EIS.

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