COUNTRYCLEAN
RECYCLING LIMITED

Country Clean Recycling Ltd.,
The Mill Castletownroche, Co.Cork

Tel: 022 46848
Fax: 022 46956
Email: sales@countryclean.ie
Web: www.countryclean.ie

Environmental Licensing Programme,
Office of Climate, Licensing & Resource Use,
EPA Headquarters,
P0 Box 3000,
Johnstown Castle Estate,
Co. Wexford.

29-March-2012

REF: W0257-01 - Country Clean Recycling Ltd- Appropriate Assessment Screening

Re: Notice in accordance Article 14 (2) (b) (ii) of Waste Management (Licensing) Regulations 2004.

Dear Mr. Huskisson

As requested in your correspondence dated 20-January 2012, in accordance Article 14(2)(b)(ii) of Waste Management (Licensing) Regulations in relation to the waste license application by Country Clean Recycling Ltd (WO257-01), please find enclosed the Appropriate Assessment Stage 1 Screening as requested.

The information is in the form of one original plus one hardcopy and includes 16 copies in electronic searchable PDF format on CD-ROMs.

Please note a non-technical summary has been not been included as the information included herein does not impinge on the non-technical summary.

Yours sincerely,

Flor Crowley
Environmental Health Safety Officer
Country Clean Recycling Ltd

APPROPRIATE ASSESSMENT SCREENING

IN LINE WITH THE REQUIREMENTS OF

ARTICLE 6(3)

OF THE

EU HABITATS DIRECTIVE

For

The Upgrade of Country Clean Recycling Ltd Waste Management Facility

Churchfield, Cork.

March 2012

1. INTRODUCTION

Country Clean recycling Ltd (CCR) have applied to the Environmental Protection Agency (EPA) for a waste license (WO-257-01) for its waste permitted site in Churchfield Cork in order to facilitate an increase in tonnage of waste handled on site, up to 100,000 tonnes.

As part of this application the EPA has requested (correspondence dated 20/01/2012) Country Clean Recycling Ltd to "asses the likelihood of significant effects of emissions from the Country Clean Recycling Limited facility on any European Site, designated under the EU Habitats Directive (92/43/EEC) and/or Birds Directive (79/409/EEC).

1.1 Terms of references

This report is an Appropriate Assessment Screening in accordance with the requirements of the EU Habitats Directive (Directive 92/43/EEC) for the waste license application made by Country Clean recycling. This directive provides legal protection for habitats and species of European importance. Articles 6(3) and 6(4) of the Habitats Directive sets out the decision-making tests for plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment:

6(3). Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, eitherindividually or in combination with other plans or projects, shall be subject toappropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

Article 6(4) deals with the steps that should be taken when it is determined, as a result of Appropriate Assessment, that a plan/project will adversely affect a European site. Issues dealing with alternative solutions, imperative reasons of

overriding public interest and compensatory measures need to be addressed in this case.

6(4). If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

1.2 Natura 2000 Sites

Natura 2000 sites are normally referred to as Special Areas of Conservation (SACs) or Special Protection Areas (SPAs).

Special Areas of Conservation (SAC)

The legal basis which surrounds the selection and designation of Special Areas of Conservation is the EU Habitats Directive and this Directive was transposed into Irish law in the European Union (Natural Habitats) Regulations 1997. Special Areas of Conservation are designated by the Department of Arts, Heritage, Gaeltacht and are prime wildlife conservation areas in the county which are considered to be important on a European level as well as on an Irish level.

Special Protection Areas (SPAs)

Special Protection Areas are designated by the Department of Arts, Heritage, Gaeltacht and the Islands. The EU Birds Directive (79/409/EEC) requires the designation of SPAs for wild birds. These sites are areas of importance for wild birds and relate to their breeding, feeding, roosting and wintering areas.

Appropriate Assessment Screening requires a review of all Natura 2000 sites that could potentially be subject to the impacts that have been identified. Clearly a key variable that will determine whether or not a particular Natura 2000 site is likely to be negatively affected by the proposed project is its physical distance from the project, and it will generally, but not necessarily, be the case that the greater the distance the lower the possibility of impacts. Table 1 contains Natura 2000 sites within 15 km of the Country Clean Recycling waste facility.

Table 1. Natura 2000 sites which may be impacted by the proposal

Site Name	Site Type	Site Code
Great Island Channel SAC	Special Areas of Conservation	001058
Cork Harbour SPA	Special Protection Areas	004030

Maps of the above Natura 2000 sites can be found on the National Parks and Wildlife Service website at www.npws.ie

1.3 Methods

This report has been prepared with reference to the following documents:

Appropriate Assessment of Planning and Projects in Ireland"; Guidance for Planning Authorities.Department of Environment, Heritage and Local Government, 2010.

Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6 (3) and (4) of the Habitats Directive 92/43/EEC (European Communities, 2002)

Circular Letter NPWS 1/10 "Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for planning authorities Department of Environment, Heritage and Local Government, 11 March 2010.

A desk top study was completed to identify the key environmental features and associated potential impacts from the upgrade of Country Clean Recycling Ltd waste recover facility in Churchfield Cork, in a format recommended by the aforementioned documents. The assessment undertakes to complete the Appropriate Assessment Screening Stage 1.

1.3.1 Stage 1: Screening

This initial stage aims to identify the likely impacts of the project on a Natura 2000 site, either alone or in combination with other projects or plans. The impacts are examined to establish whether these impacts are likely to be significant. Assessment of the significance of effects is carried out in consultation with the relevant nature agencies.

2 DESCRIPTION OF PLAN OR PROJECT

2.1 Site Location

Country Clean Recycling Ltd (CCR) operate a Waste Transfer and Recycling Station (National Grid Reference E66068, N73642) situated in Churchfield Industrial Estate, John F. Connolly Road, Co. Cork in an area which is zoned by Cork City Council as "light industry and related uses".

Access to the site can be gained via a network of third class routes which may be approached to the south via the N22 (Kerry to Cork) National Primary Route, and the East via the N27 (Cork to Limerick) National Primary Route. The site is bounded by industrial/commercial facilities, and greenfields.

2.2 Description

The site covers an area of approximately 0.87 hectares which includes the Materials Recovery Building, offices, canteen, toilet facilities and storage building. The remainder is used for skip storage, vehicular movement and parking, and for car parking. There are also bunded fuel storage facilities, a truck wash bay and a weighbridge within the premises. The entire site at the facility is enclosed by fencing approximately 2 metres in height and includes one entrance off John F. Connolly Road.

The facility has operated for over 10 years as a waste transfer station under various waste permits from Cork City Council. The facility at present accepts waste from the following sources; CCR skip collections (house commercial and C&D); residual waste, dry recyclables, glass and cardboard from CCR wheelie bin collections (house & commercial); unsorted waste from other waste facilities and waste from other waste collectors.

It is proposed to demolish 1,336m2 of the existing Materials Recovery Facility (MRF) building, and extend it by 2980m2.

Further development of the site is likely to include upgrading the surface and foul water networks, and increasing the size of the materials recovery facility buildings to facilitate the increased processing requirements..

2.3 Land Use

In Cork City Development Pan 2009 to 2015 the site is zone as Light Industry.
The site is classified as "discontinuous urban" under CORINE land cover.

3 BRIEF DESCRIPTION OF THE NATURA 2000 SITE

3.1 Great Island Channel SAC 001058

The Great Island Channel stretches from Little Island to Midleton, with its southern boundary being formed by Great Island. Its location relation to the CCR site is shown in figure 1.
It is an integral part of Cork Harbour which contains several other sites of conservation interest. Geologically, Cork Harbour consists of two large areas of open water in a limestone basin, separated from each other and the open sea by ridges of Old Red Sandstone. Within this system, Great Island Channel forms the eastern stretch of the river basin and compared to the rest of Cork Harbour, is relatively undisturbed. Within the site is the estuary of the Owennacurra and Dungourney Rivers. These rivers, which flow through Midleton, provide the main source of freshwater to the North Channel. The main habitats of conservation interest are the sheltered tidal sand and mudflats and Atlantic salt meadows, both habitats listed on Annex I of the EU Habitats Directive.
The complete site synopsis can be found appendix A

3.1.1 Conservation Objectives for Great Island Channel SAC [001058]

Objective: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:
[1140] Mudflats and sandflats not covered by seawater at low tide
[1330] Atlantic salt meadows (Glauco-Puccinellietalia maritimae)

The Complete Conservation Objectives and the NATURA 2000 Standard Data Form for the Great Island Channel SAC [001058] can be found in appendix A.

3.2 Cork Harbour SPA 004030

Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay and the Rostellan and Poulnabibe inlets. Its location relation to the CCR site is shown in figure 2.

Owing to the sheltered conditions, the intertidal flats are often muddy in character. These muds support a range of macro-invertebrates, notably *Macoma balthica*, Scrobicularia plana, Hydrobia ulvae, Nepthys hombergi, Nereis diversicolor and Corophium volutator.

Cork Harbour is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its populations of Black-tailed Godwit and Redshank. In addition, there are at least 18 wintering species that have populations of national importance, as well as a nationally important breeding colony of Common Tern. Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Golden Plover, Bar-tailed Godwit, Ruff and Common Tern. The site provides both feeding and roosting sites for the various bird species that use it.

The complete site synopsis can be found appendix B

3.2.1 Conservation Objectives for Cork Harbour SPA [004030]

Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

- [wintering] Tachybaptus ruficollis
- [wintering] Podiceps cristatus
- [wintering] Ardea cinerea
- [wintering] Tadorna tadorna
- [wintering] Anas penelope
- [wintering] Anas crecca
- [wintering] Anas acuta

- [wintering] Anas clypeata
- [wintering] Mergus serrator
- [wintering] Haematopus ostralegus
- [wintering] Pluvialis apricaria
- [wintering] Pluvialis squatarola
- [wintering] Vanellus vanellus
- [wintering] Calidris alpina
- [wintering] Limosa limosa
- [wintering] Limosa lapponica
- [wintering] Numenius arquata
- [wintering] Tringa totanus
- [wintering] Chroicocephalus ridibundus
- [wintering] Larus canus
- [wintering] *Larus fuscus*
- [breeding] Sterna hirundo
- [] Wetlands & Waterbirds

Complete Conservation Objectives and the NATURA 2000 Standard Data Form for the Cork Harbour SPA [004030] can be found in appendix B.

4 ASSESSMENT CRITERIA

Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site.	▪ There is the potential for accidental discharges to ground from leachate generated within the waste material as it is accepted and processed at the facility. ▪ Due to the movement of vehicles and machinery on site and the storage of hydrocarbons there is a potential for accidental spillages and/or leakages of potentially polluting materials which could have a negative impact on the underlying groundwater's. ▪ The potential pollutants (associated with the development) are hydrocarbons, metals, nutrients and bacteria. ▪ Surface water run-off from the yard areas are directed through a surface water collection system and discharged off site through a siltation trap and oil interceptor. In the event of this system becoming damaged or overburdened, there may be a release of silt and hydrocarbons to Cork City Council storm water or foul sewer system. ▪ Dust generated from on site activities could affect a NATURA 2000 site. • In order to identify potential in Combination Effects, other plans and projects were identified for this area. ▪ There are a number of existing waste facilities within the Churchfield Industrial estate, National Recycling, Ashgrove Recycling and a proposed waste facility by Churchfield Recycling Ltd. All these are governed by Waste License or Waste permits which make sure that emissions from these facilities do not have a negative environmental impact on the local. • The proposed upgrading of the waste transfer station would represent an insignificant component of the overall In Combination Effects of the combined projects.

Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 site by virtue of: ▪ **Size and scale;** ▪ **Land-take;** ▪ **Distance from the Natura 2000 site or key Features of the site;** ▪ **Resource requirements (water abstraction etc.);** ▪ **Emissions (disposal to land, water or air);** ▪ **Excavation requirements;** ▪ **Transportation requirements;** ▪ **Duration of construction, operation, decommissioning, etc.;** ▪ **Other.**	▪ **Size and scale;** Direct impacts; None Indirect; None. Secondary; None ▪ There will be no Land-take in this project ▪ The Waste Facility is located 10 Km to the nearest point in Great Island Channel SAC [001058] see figure 1 and 5.5 km to the nearest point to the Cork Harbour SPA [004030] see figure 2. ▪ **Resource requirements (water abstraction etc.)**; None **Emissions to water** ▪ All potentially polluting substances (such as hydrocarbons) will be/are stored in properly bunded areas in accordance with best engineering standards and environmental guidelines. ▪ The site is located on the mid slope of a hill. The overall topography of the land is gently slopping to the north east. The nearest surface water body is the Bride river located 1km to the north east. The Bride river flows west and is a tributary of the Shournagh River, which is a tributary of the River Lee. There is no direct discharge into a river or stream from the facility. ▪ Surface water run-off from the yard areas are directed through the surface water collection system and discharged off site through a silt trap and a full retention oil interceptor (located to the South end of the facility) and into Cork City Council public foul sewer in compliance with Cork City Council Discharge license WP(S)629/10 . ▪ The surface water outfalls discharge into Cork City's storm waste drainage system. ▪ All wastewater from the canteen and office areas discharge to a separate foul water sewer located to the south of the site. ▪ No hazardous waste is accepted on site making a potential accidental leachate spill more benign. ▪ Residual municipal waste delivered on site which has the greatest potential to generate leachate is moved off site within 24 hours.

	▪ All waste is stored in doors reducing the potential for generating lechate. **Emissions to Air** ▪ All waste processing is planned to take place within the buildings of the material recovery facility minimising emissions including dust. ▪ Dust suppression system is in place inside the material recovery facility. ▪ Given the upgrade of the facility would be to an EPA waste licensed facility means it will be managed in a manner to have no adverse environmental impacts. ▪ No operations on site result in point emissions. Compliance with planning regulations, discharge license also means that there are no direct discharges to surface water. ▪ OES Consulting carried out an Environmental Impact Statement (EIS) in January 2009 as part of Country Clean Recycling Ltd planning application to upgrade the site in line with its EPA application. It concluded that once mitigation measures as outlined within were put in place then there would be no significant environmental impacts (See Appendix D). ▪ Facility will be managed putting in place mitigation measures as outlined in the EIS to make sure there are no emissions that will impact negatively on any SAC and SPAs. ▪ Facility is managed in compliance with Cork City Council Waste Permit (since 2001) making sure there is no environmental negative including any impacts on SAC and SPA's. ▪ Facility would be managed in compliance with EPA waste license making sure there is no environmental negative including any impacts on SAC and SPA's. **Combination effects;** ▪ There are a number of existing waste facilities within the Churchfield Industrial estate, National Recycling, Ashgrove Recycling and a proposed waste facility by

	Churchfield Recycling Ltd. All these are governed by Waste License or Waste permits which make sure that emissions from these facilities do not have a negative environmental impact on the local ▪ Fugitive emissions or accidental spillages from these sites are unlikely to have an affect on the air, water and physical quality of the aforementioned NATURA 2000 sites due there distance from the sites. ▪ Other facilities within a 15 km radius of the SAC & SPA must comply with planning legislation which condition any water runs to make sure that they are within the carrying capacity of Cork City & County foul and surface water drainage carrying capacity. ▪ The facility is situated in a moderately sensitive area with regards the likelihood that development will cause environmental deterioration as reported in The Strategic Environmental Assessment of the Cork City Development Plan 2009–2015. See Appendix C for full report. ▪ Overlays of environmental sensitivities within the city including Cork Harbour SPAs where considered for this report. It states that "Where the mapping shows a concentration of environmental sensitivities there is an increased likelihood that development will conflict with these sensitivities and cause environmental deterioration. This is particularly the case where the cumulative development of small-scale projects gradually causes a slow deterioration of a resource" (CASS, 2009), ▪ The CCR facility is not located in such an area therefore the cumulative effectives are considered not to have any significant effects on any existing Natura 2000 site.
Describe any likely changes to the site arising as a result of: ▪ Reduction of habitat area; ▪ Disturbance to key species; ▪ Habitat or species fragmentation; ▪ Reduction in species density; ▪ Changes in key indicators of	▪ There will be no reduction in habitat area or species fragmentation resulting form the proposed works. ▪ Climate change will result in an increase in sea levels, reducing the extent of habitat available to species dependent on sand and mud flats (EPA, 2003).

conservation value (water quality etc.); ▪ Climate change.	▪ The upgrading the facility will result in the possibility of increased waste tonnage intake and in turn help move waste treatment further down the waste hierarchy towards recovery and recycling, creating a reduction in green house gas emissions.
Describe any likely impacts on the Natura 2000 site as a whole in terms of: ▪ Interference with the key relationships that define the structure of the site; ▪ Interference with key relationships that define the function of the site;	▪ **Interference with the key relationships that define the structure of the site;** • None ▪ **Interference with key relationships that define the function of the site;** • None
Provide indicators of significance as a result of the identification of effects set out above in terms of: ▪ Loss; ▪ Fragmentation; • Disruption; ▪ Disturbance; ▪ Change to key elements of the site (e.g. water quality etc.).	▪ **Loss;** N/A ▪ **Fragmentation;** N/A ▪ **Disruption;** N/A ▪ **Disturbance;** N/A ▪ **Change to key elements of the site (e.g. water quality etc.);** N/A
Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.	On the basis an EIS being carried out in the last 2 and half years stating the expansion represents no risk to the local environment which took into account (SPA and SAC) and the facility has been in operation for over ten years without any negative environmental impacts on any Natura 2000 sites, it has been concluded that impacts are likely to be insignificant.

5 CONCLUSION

An Appropriate Assessment is not required on the basis that;

- An EIS being carried out in the last 2 and half years stating the expansion represents no risk to the local environment which took into account (SPA and SAC) and the facility has been in operation for over ten years without any negative environmental impacts on any Natura 2000 sites, it has been concluded that impacts are likely to be insignificant.

- The facility is not within the vicinity of the Great Island Channel SAC or the Cork Harbour SPA to the extent that there is no potential for any accidental discharges to discharge directly into either of these sites.
- The Department of Environment Heritage and Local Government did not raise any concerns in relation to any expansion of the facility when responding to a letter received from OES with regards the EIS for the facility expansion (see appendix E).
- An Taisce did not raise any concerts in relation to any expansion of the facility when responding to a letter received from OES with regards the EIS for the facility expansion (see appendix F).

6 REFERENCES;

EPA (2003) Climate Change Scenarios and Impacts for Ireland. ERTDI report Series No. 15. Environmental Protection Agency, Wexford, 2003.

Reported Completed by;
Flor Crowley BSc, MSc.
Country Clean Recycling Ltd.
March 2012.

7 APPENDICES

Appendices

APPENDIX A

Site Documents Great Island Channel SAC 001058

- Site Synopsis
- Conservation Objectives
- NATURA 2000 Standard Data Form

APPENDIX B

Site Documents Cork Harbour SPA 004030

- Site Synopsis
- Conservation Objectives
- NATURA 2000 Standard Data Form

APPENDIX C

Strategic Environmental Assessment of the Cork City Development Plan 2009–2015.

APPENDIX D

Environmental Impact Statement for the expansions of a Materials Recovery Facility at Country Clean Recycling, Churchfield Ind Est., John F. Connolly Road, Co Cork. January 2009

APPENDIX E

Department of Environment Heritage and Local Government Correspondence in relation to EIS for the expansions of a Materials Recovery Facility.

APPENDIX F

An Taisce Correspondence in relation to EIS for the expansions of a Materials Recovery Facility.

APPENDIX A

Site Documents Great Island Channel SAC 001058

- **Site Synopsis**
- **Conservation Objectives**
- **NATURA 2000 Standard Data Form**

SITE SYNOPSIS

SITE NAME: GREAT ISLAND CHANNEL

SITE CODE: 001058

The Great Island Channel stretches from Little Island to Midleton, with its southern boundary being formed by Great Island. It is an integral part of Cork Harbour which contains several other sites of conservation interest. Geologically, Cork Harbour consists of two large areas of open water in a limestone basin, separated from each other and the open sea by ridges of Old Red Sandstone. Within this system, Great Island Channel forms the eastern stretch of the river basin and, compared to the rest of Cork Harbour, is relatively undisturbed. Within the site is the estuary of the Owennacurra and Dungourney Rivers. These rivers, which flow through Midleton, provide the main source of freshwater to the North Channel.

The main habitats of conservation interest are the sheltered tidal sand and mudflats and Atlantic salt meadows, both habitats listed on Annex I of the EU Habitats Directive. Owing to the sheltered conditions, the intertidal flats are composed mainly of soft muds. These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana*, *Hydrobia ulvae*, *Nepthys hombergi, Nereis diversicolor* and *Corophium volutator*. Green algal species occur on the flats, especially *Ulva lactua* and *Enteromorpha* spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places, especially at Rossleague and Belvelly. The salt marshes are scattered through the site and are all of the estuarine type on mud substrate. Species present include Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Plantain (*Plantago maritima*), Greater Sea-spurry (*Spergularia media*), Sea Lavender (*Limonium humile*), Sea Arrowgrass (*Triglochin maritimum*), Mayweed (*Matricaria maritima*) and Red Fescue (*Festuca rubra*).

The site is extremely important for wintering waterfowl and is considered to contain three of the top five areas within Cork Harbour, namely North Channel, Harper's Island and Belvelly-Marino Point. Shelduck are the most frequent duck species with 800-1000 birds centred on the Fota/Marino Point area. There are also large flocks of Teal and Wigeon, especially at the eastern end. Waders occur in the greatest density north of Rosslare, with Dunlin, Godwit, Curlew and Golden Plover the commonest species. A population of about 80 Grey Plover is a notable feature of the area. All the mudflats support feeding birds; the main roost sites are at Weir Island and Brown Island and to the north of Fota at Killacloyne and Harper's Island. Ahanesk supports a roost also but is subject to disturbance. The numbers of Grey Plover and Shelduck, as given above, are of national importance.

The site is an integral part of Cork Harbour which is a wetland of international importance for the birds it supports. Overall, Cork Harbour regularly holds over 20,000 waterfowl and contains Internationally important numbers of Black-tailed Godwit (1,181) and Redshank (1,896) along with Nationally important numbers of

nineteen other species. Furthermore, it contains the large Dunlin (12,019) and Lapwing (12,528) flocks. All counts are average peaks, 1994/95 – 1996/97. Much of the site forms part of Cork Harbour Special Protection Area, an important bird area designated under the EU Birds Directive.

While the main land use within the site is aquaculture (Oyster farming), the greatest threats to its conservation significance come from road works, infilling, sewage outflows and possible marina developments.

The site is of major importance for the two habitats listed on the EU Habitats Directive that it contains, as well as for its important numbers of wintering waders and wildfowl. It also supports a good invertebrate fauna.

2.10.2001

Conservation Objectives for Great Island Channel SAC [001058]

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Objective: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:

- [1140] Mudflats and sandflats not covered by seawater at low tide
- [1330] Atlantic salt meadows (*Glauco-Puccinellietalia* maritimae)

Citation:

NPWS (2011) Conservation objectives for Great Island Channel SAC [001058]. Generic Version 3.0. Department of Arts, Heritage & the Gaeltacht.

For more information please go to: www.npws.ie/protectedsites/conservationmanagementplanning

NATURA 2000

STANDARD DATA FORM

FOR SPECIAL PROTECTION AREAS (SPA)

FOR SITES ELIGIBLE FOR IDENTIFICATION AS SITES OF COMMUNITY IMPORTANCE (SCI)

AND

FOR SPECIAL AREAS OF CONSERVATION (SAC)

1. SITE IDENTIFICATION

1.1. TYPE	*1.2. SITE CODE*	*1.3. COMPILATION DATE*	*1.4. UPDATE*
K	IE0001058	200001	

1.5. RELATION WITH OTHER NATURA 2000 SITES:

NATURA 2000 SITE CODES

IE0002267

1.6. RESPONDENT(S):

National Parks & Wildlife Service of the Department of the Environment, Heritage and Local Government. 7 Ely Place, Dublin 2, Ireland.

1.7. SITE NAME:

Great Island Channel

1.8. SITE INDICATION AND DESIGNATION/CLASSIFICATION DATES:

DATE SITE PROPOSED AS ELIGIBLE AS SCI:	*DATE CONFIRMED AS SCI:*
200001	
DATE SITE CLASSIFIED AS SPA:	*DATE SITE DESIGNATED AS SAC:*

2. SITE LOCATION

2.1. SITE CENTRE LOCATION

LONGITUDE	LATITUDE
W 8 11 10	51 53 38

W/E (Greenwich)

2.2. AREA (HA):

1443.21

2.3. SITE LENGTH (KM):

2.4. ALTITUDE (M):

MINIMUM	MAXIMUM	MEAN
0	15	2

2.5. ADMINISTRATIVE REGION:

NUTS CODE	REGION NAME	% COVER
IE025	South-West (IRL)	12
Marine area not covered by a NUTS-region		8

2.6. BIOGEOGRAPHIC REGION:

Alpine	Atlantic	Boreal	Continental	Macaronesian	Mediterranean
☐	☑	☐	☐	☐	☐

3. ECOLOGICAL INFORMATION

3.1. HABITAT types present on the site and assessment for them:

ANNEX I HABITAT TYPES:

CODE	%COVER	REPRESENTATIVITY	RELATIVE SURFACE	CONSERVATION STATUS	GLOBAL ASSESSMENT
1140	62	B	B	B	B
1130	20	D			
1320	10	D			
1330	2	B	C	B	B

3.2. SPECIES

covered by Article 4 of Directive 79/409/EEC

and

listed in Annex II of Directive 92/43/EEC

and

site assessment for them

3.2.a. BIRDS listed on Annex I of Council directive 79/409/EEC

CODE	NAME	POPULATION				SITE ASSESSMENT			
		Resident	Migratory			Population	Conservation	Isolation	
			Breed	Winter	Stage				
A140	Pluvialis apricaria			2250	i	C	B	C	
A157	Limosa lapponica			215	i	C	B	C	

3.2.b. Regularly occuring Migratory Birds not listed on Annex I of Council directive 79/409/EEC

CODE	NAME	POPULATION				SITE ASSESSMENT			
		Resident	Migratory			Population	Conservation	Isolation	
			Breed	Winter	Stage				
A017	Phalacrocorax carbo			317	i	B	A	C	
A048	Tadorna tadorna			1105	i	B	A	C	
A050	Anas penelope			1178	i	C	A	C	
A052	Anas crecca			554	i	C	A	C	
A053	Anas platyrhynchos			237	i	C	B	C	
A054	Anas acuta			22	i	C	B	C	
A056	Anas clypeata			35	i	C	B	C	
A070	Mergus merganser			65	i	B	A	C	
A130	Haematopus ostralegus			871	i	C	A	C	
A137	Charadrius hiaticula			50	i	C	B	C	
A141	Pluvialis squatarola			40	i	C	B	C	
A142	Vanellus vanellus			6000	i	B	A	C	
A149	Calidris alpina			6000	i	B	A	C	
A156	Limosa limosa			590	i	B	A	C	
A160	Numenius arquata			815	i	C	B	C	
A162	Tringa totanus			948	i	B	A	C	
A164	Tringa nebularia			17	i	B	B	C	
A169	Arenaria interpres			50	i	C	B	C	

3.2.c. MAMMALS listed on Annex II of Council directive 92/43/EEC

3.2.d. AMPHIBIANS and REPTILES listed on Annex II of Council directive 92/43/EEC

3.2.e. FISHES listed on Annex II of Council directive 92/43/EEC

3.2.f. INVERTEBRATES listed on Annex II of Council directive 92/43/EEC

3.2.g. PLANTS listed on Annex II of Council directive 92/43/EEC

5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES

5.1. DESIGNATION TYPES at National and Regional level:

5.2. RELATION OF THE DESCRIBED SITE WITH OTHER SITES:

designated at National or Regional level:

designated at International level:

5.3. RELATION OF THE DESCRIBED SITE WITH CORINE BIOTOPE SITES:

CORINE SITE CODE	OVERLAP TYPE	% COVER
800000079		

6. IMPACTS AND ACTIVITIES IN AND AROUND THE SITE

6.1. GENERAL IMPACTS AND ACTIVITIES AND PROPORTION OF THE SURFACE OF THE SITE AFFECTED

IMPACTS AND ACTIVITIES WITHIN the site

CODE	INTENSITY	% OF SITE	INFLUENCE
140	A **B** C	3	+ **0** -
200	**A** B C	1	+ 0 -
502	**A** B C	1	+ 0 -
701	**A** B C	88	+ 0 -
802	**A** B C	2	+ 0 -
952	A **B** C	88	+ 0 -
954	A **B** C	20	+ 0 -

IMPACTS AND ACTIVITIES AROUND the site

CODE	INTENSITY	INFLUENCE
120	A **B** C	+ 0 -
400	**A** B C	+ 0 -
701	**A** B C	+ 0 -

6.2. SITE MANAGEMENT AND PLANS

BODY RESPONSIBLE FOR THE SITE MANAGEMENT

SITE MANAGEMENT AND PLANS

A management plan for the conservation of this site will be prepared.

7. MAPS OF THE SITE

- Physical map

- Aerial photograph(s) included:

NUMBER	AREA	SUBJECT	DATE
0636018	Great Island Channel	Overview of western / central sections	199506

8. SLIDES

APPENDIX B

Site Documents Cork Harbour SPA 004030

- **Site Synopsis**
- **Conservation Objectives**
- **NATURA 2000 Standard Data Form**

SITE SYNOPSIS

SITE NAME: CORK HARBOUR SPA

SITE CODE: 004030

Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay and the Rostellan and Poulnabibe inlets.

Owing to the sheltered conditions, the intertidal flats are often muddy in character. These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana*, *Hydrobia ulvae*, *Nepthys hombergi, Nereis diversicolor* and *Corophium volutator*. Green algae species occur on the flats, especially *Ulva lactua* and *Enteromorpha* spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places, especially where good shelter exists, such as at Rossleague and Belvelly in the North Channel. Salt marshes are scattered through the site and these provide high tide roosts for the birds. Salt marsh species present include Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Plantain (*Plantago maritima*), Lax-flowered Sea-lavender (*Limonium humile*) and Sea Arrowgrass (*Triglochin maritima*). Some shallow bay water is included in the site. Cork Harbour is adjacent to a major urban centre and a major industrial centre. Rostellan Lake is a small brackish lake that is used by swans throughout the winter. The site also includes some marginal wet grassland areas used by feeding and roosting birds.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Shelduck, Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Black-headed Gull, Common Gull, Lesser Black-backed Gull and Common Tern. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

Cork Harbour is an internationally important wetland site, regularly supporting in excess of 20,000 wintering waterfowl, for which it is amongst the top five sites in the country. The two-year mean of summed annual peaks for the entire harbour complex was 55,401 for the period 1995/96 and 1996/97. Of particular note is that the site supports internationally important populations of Black-tailed Godwit (905) and Redshank (1,782) - all figures given are average winter means for the two winters 1995/96 and 1996/97. At least 18 other species have populations of

national importance, as follows: Little Grebe (51), Great Crested Grebe (204), Cormorant (705), Grey Heron (63), Shelduck (2,093), Wigeon (1,852), Teal (922), Pintail (66), Shoveler (57), Red-breasted Merganser (88), Oystercatcher (1,404), Golden Plover (3,653), Grey Plover (84), Lapwing (7,688), Dunlin (10,373), Bar-tailed Godwit (417), Curlew (1,325) and Greenshank (26). The Shelduck population is the largest in the country (over 10% of national total). The site has regionally or locally important populations of a range of other species, including Whooper Swan (10), Pochard (145) and Turnstone (79). Other species using the site include Gadwall (13), Mallard (456), Tufted Duck (113), Goldeneye (31), Coot (53), Mute Swan (38), Ringed Plover (34) and Knot (38). Cork Harbour is a nationally important site for gulls in winter and autumn, especially Black-headed Gull (4,704), Common Gull (3,180) and Lesser Black-backed Gull (1,440).

A range of passage waders occurs regularly in autumn, including such species as Ruff (5-10), Spotted Redshank (1-5) and Green Sandpiper (1-5). Numbers vary between years and usually a few of each of these species over-winter.

The wintering birds in Cork Harbour have been monitored since the 1970s and are counted annually as part of the I-WeBS scheme.

Cork Harbour has a nationally important breeding colony of Common Tern (3-year mean of 69 pairs for the period 1998-2000, with a maximum of 102 pairs in 1995). The birds have nested in Cork Harbour since about 1970, and since 1983 on various artificial structures, notably derelict steel barges and the roof of a Martello Tower. The birds are monitored annually and the chicks are ringed.

Extensive areas of estuarine habitat have been reclaimed since about the 1950s for industrial, port-related and road projects, and further reclamation remains a threat. As Cork Harbour is adjacent to a major urban centre and a major industrial centre, water quality is variable, with the estuary of the River Lee and parts of the Inner Harbour being somewhat eutrophic. However, the polluted conditions may not be having significant impacts on the bird populations. Oil pollution from shipping in Cork Harbour is a general threat. Recreational activities are high in some areas of the harbour, including jet skiing which causes disturbance to roosting birds.

Cork Harbour is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its populations of Black-tailed Godwit and Redshank. In addition, there are at least 18 wintering species that have populations of national importance, as well as a nationally important breeding colony of Common Tern. Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Golden Plover, Bar-tailed Godwit, Ruff and Common Tern. The site provides both feeding and roosting sites for the various bird species that use it.

26.2.2008

Conservation Objectives for Cork Harbour SPA [004030]

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

- [wintering] *Tachybaptus ruficollis*
- [wintering] *Podiceps cristatus*
- [wintering] *Ardea cinerea*
- [wintering] *Tadorna tadorna*
- [wintering] *Anas penelope*
- [wintering] *Anas crecca*
- [wintering] *Anas acuta*
- [wintering] *Anas clypeata*
- [wintering] *Mergus serrator*
- [wintering] *Haematopus ostralegus*
- [wintering] *Pluvialis apricaria*
- [wintering] *Pluvialis squatarola*
- [wintering] *Vanellus vanellus*
- [wintering] *Calidris alpina*
- [wintering] *Limosa limosa*

Citation:

NPWS (2011) Conservation objectives for Cork Harbour SPA [004030]. Generic Version 3.0. Department of Arts, Heritage & the Gaeltacht.

For more information please go to: www.npws.ie/protectedsites/conservationmanagementplanning

- [wintering] *Limosa lapponica*
- [wintering] *Numenius arquata*
- [wintering] *Tringa totanus*
- [wintering] *Chroicocephalus ridibundus*
- [wintering] *Larus canus*
- [wintering] *Larus fuscus*
- [breeding] *Sterna hirundo*
- [] Wetlands & Waterbirds

NATURA 2000

STANDARD DATA FORM

FOR SPECIAL PROTECTION AREAS (SPA)

FOR SITES ELIGIBLE FOR IDENTIFICATION AS SITES OF COMMUNITY IMPORTANCE (SCI)

AND

FOR SPECIAL AREAS OF CONSERVATION (SAC)

1. SITE IDENTIFICATION

1.1. TYPE	*1.2. SITE CODE*	*1.3. COMPILATION DATE*	*1.4. UPDATE*
J	IE0004030	200311	

1.5. RELATION WITH OTHER NATURA 2000 SITES:

NATURA 2000 SITE CODES

IE0001058

1.6. RESPONDENT(S):

National Parks & Wildlife Service of the Department of Arts, Heritage, Gaeltacht and the Islands. 51 St. Stephen's Green, Dublin 2, Ireland

1.7. SITE NAME:

Cork Harbour SPA

1.8. SITE INDICATION AND DESIGNATION/CLASSIFICATION DATES:

DATE SITE PROPOSED AS ELIGIBLE AS SCI: ***DATE CONFIRMED AS SCI:***

DATE SITE CLASSIFIED AS SPA: ***DATE SITE DESIGNATED AS SAC:***

199411

2. SITE LOCATION

2.1. SITE CENTRE LOCATION

LONGITUDE	LATITUDE
W 8 19 0	51 53 0

W/E (Greenwich)

2.2. AREA (HA):

2587.25

2.3. SITE LENGTH (KM):

2.4. ALTITUDE (M):

MINIMUM	MAXIMUM	MEAN
-5	5	-1

2.5. ADMINISTRATIVE REGION:

NUTS CODE	REGION NAME	% COVER
IE025	South-West (IRL)	2
Marine area not covered by a NUTS-region		9

2.6. BIOGEOGRAPHIC REGION:

Alpine	Atlantic	Boreal	Continental	Macaronesian	Mediterranean
☐	☑	☐	☐	☐	☐

3. ECOLOGICAL INFORMATION

3.1. HABITAT types present on the site and assessment for them:

ANNEX I HABITAT TYPES:

CODE	%COVER	REPRESENTATIVITY	RELATIVE SURFACE	CONSERVATION STATUS	GLOBAL ASSESSMENT

3.2. SPECIES

covered by Article 4 of Directive 79/409/EEC

and

listed in Annex II of Directive 92/43/EEC

and

site assessment for them

3.2.a. BIRDS listed on Annex I of Council directive 79/409/EEC

CODE	NAME	POPULATION				SITE ASSESSMENT			
		Resident	Migratory			Population	Conservation	Isolation	
			Breed	Winter	Stage				
A140	Pluvialis apricaria			805 i		C	B	C	
A157	Limosa lapponica			45 i		C	B	C	
A038	Cygnus cygnus			10 i		C	C	C	
A151	Philomachus pugnax			1-5 i	5-10 i	C	B	C	
A193	Sterna hirundo		69 p			B	B	C	A

3.2.b. Regularly occuring Migratory Birds not listed on Annex I of Council directive 79/409/EEC

CODE	NAME	POPULATION				SITE ASSESSMENT			
		Resident	Migratory			Population	Conservation	Isolation	
			Breed	Winter	Stage				
A005	Podiceps cristatus			218 i		B	A	C	A
A017	Phalacrocorax carbo			520 i		B	A	C	A
A048	Tadorna tadorna			1426 i		B	A	C	A
A050	Anas penelope			1750 i		C	A	C	
A052	Anas crecca			807 i		C	A	C	
A054	Anas acuta			84 i		B	A	C	A
A056	Anas clypeata			135 i		B	A	C	A
A069	Mergus serrator			90 i		B	A	C	
A130	Haematopus ostralegus			791 i		C	A	C	
A141	Pluvialis squatarola			66 i		C	A	C	
A142	Vanellus vanellus			3614 i		C	A	C	
A149	Calidris alpina			4936 i		B	A	C	A
A156	Limosa limosa			412 i		B	A	C	
A160	Numenius arquata			1345 i		B	A	C	
A162	Tringa totanus			1614 i		B	A	C	A
A164	Tringa nebularia			36 i		C	A	C	
A169	Arenaria interpres			99 i		C	A	C	
A179	Larus ridibundus			948 i		C	A	C	
A182	Larus canus			2630 i		B	A	C	A
A051	Anas strepera			15 i		C	B	C	
A053	Anas platyrhynchos			456 i		C	A	C	
A059	Aythya ferina			145 i		C	B	C	
A061	Aythya fuligula			97 i		C	B	C	
A067	Bucephala clangula			15 i		C	B	C	
A125	Fulica atra			77 i		C	B	C	

A137	Charadrius hiaticula	51	i			C		B		C
A143	Calidris canutus	31	i			C		B		C
A183	Larus fuscus	261	i			B		A		C
A161	Tringa erythropus	1-3	i	1-5	i	C		B		C
A165	Tringa ochropus	1-3	i	1-5	i	C		B		C

3.2.c. MAMMALS listed on Annex II of Council directive 92/43/EEC

3.2.d. AMPHIBIANS and REPTILES listed on Annex II of Council directive 92/43/EEC

3.2.e. FISHES listed on Annex II of Council directive 92/43/EEC

3.2.f. INVERTEBRATES listed on Annex II of Council directive 92/43/EEC

3.2.g. PLANTS listed on Annex II of Council directive 92/43/EEC

3.3. Other Important Species of Flora and Fauna

GROUP	SCIENTIFIC NAME	POPULATION	MOTIVATION
B M A R F I P			
B	Tachybaptus ruficollis	68 i	C
B	Ardea cinerea	47 i	C
B	Cygnus olor	39 i	C

(B = Birds, M = Mammals, A = Amphibians, R = Reptiles, F = Fish, I = Invertebrates, P = Plants)

4. SITE DESCRIPTION

4.1. GENERAL SITE CHARACTER:

Habitat classes	% cover
Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	94
Salt marshes, Salt pastures, Salt steppes	1
Shingle, Sea cliffs, Islets	1
Inland water bodies (Standing water, Running water)	1
Bogs, Marshes, Water fringed vegetation, Fens	1
Humid grassland, Mesophile grassland	1
Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	1
Total habitat cover	**100 %**

Other site characteristics

Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owenacurra. The site comprises the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy Estuary, Whitegate Bay and the Rostellan inlet. Owing to the sheltered conditions, the intertidal flats are often muddy in character. Salt marshes are scattered through the site and these provide high tide roosts for the birds. Otherwise, birds roost on stony shorelines and in some areas fields adjacent to the shore. Some shallow bay water is included in the site. Cork Harbour is adjacent to a major urban centre and a major industrial centre.

4.2. QUALITY AND IMPORTANCE:

Cork Harbour is an internationally important wetland site, regularly supporting in excess of 20,000 wintering waterfowl, for which it is amongst the top five sites in the country. It supports an internationally important population of Tringa totanus. A further 15 species have populations of national importance, with particularly notable numbers of Tadorna tadorna (9.6% of national total), Anas clypeata (4.5% of total), Anas acuta (4.2% of total) and Phalacrocorax carbo (4.1% of total) occurring. It has regionally important populations of Pluvialis apricaria and Limosa lapponica. Passage waders are regular, including Philomachus pugnax and Tringa erythropus. It is an important site for gulls in winter and autumn, especially Larus canus and Larus fuscus. The site provides both feeding and roosting areas for the waterfowl species. The quality of most of the estuarine habitats is good. The wintering birds have been well-monitored since the 1970s. The site has a breeding colony of Sterna hirundo which is of national importance. The colony is monitored annually and the chicks ringed.

4.3. VULNERABILITY

There are no serious imminent threats to the wintering birds. Though the intertidal areas receive polluted water, there are no apparent significant impacts on the associated flora and fauna. Oil pollution from shipping in Cork Harbour is a general threat. Aquaculture occurs though it is not known if this has significant impacts on the birds. Recreational activities are high in some areas, including jet skiing which causes disturbance to roosting birds. Extensive areas of estuarine habitat has been reclaimed since about the 1950s for industrial, port-related and road projects, and further reclamation remains a threat.

4.4. SITE DESIGNATION:

4.5. OWNERSHIP

State: Department of Communications, Marine and Natural Resources

Private: multiple

4.6. DOCUMENTATION

Colhoun, K. (2001). I-WeBS Report 1998-99. BirdWatch Ireland, Dublin.

Curtis, T.G.F. and Sheehy Skeffington, M.J. (1998). The salt marshes of Ireland: an inventory and account of their geographical variation. Biology and Environment, Proceedings of the Royal Irish Academy 98B: 87-104.

Hannon, C. (1997). The 1995 All-Ireland Tern Survey. BirdWatch Ireland Conservation Report No. 97/1.

Hannon, C., Berrow, S.D. and Newton S.F. (1997). The status and distribution of breeding Sandwich Sterna sandvicensis, Roseate S. dougallii, Common S. hirundo, Arctic S. paradisaea and Little Terns S. albifrons in Ireland in 1995. Irish Birds 6: 1-22.

Hunt, J., Derwin, J., Coveney, J. and Newton, S. (2000). Republic of Ireland. Pp. 365-416 in Heath, M.F. and Evans, M.I. (eds). Important Bird Areas in Europe: Priority Sites for Conservation 1: Northern Europe. Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 8).

Hutchinson, C.D. and O'Halloran, J. (1984). The waterfowl of Cork Harbour. Irish Birds 2: 445-456.

Irish Wetland Birds Survey (I-WeBS) Database, 1994/95-2000/01. BirdWatch Ireland, Dublin.

McGarrigle, M.L., Bowman, J.J., Clabby, K.J., Lucey, J., Cunningham, P., MacCarthaigh, M., Keegan, M., Cantrell, B., Lehane, M., Clenaghan, C. and Toner, P.F. (2002). Water Quality in Ireland 1998-2000. Environmental Protection Agency, Wexford.

Merne, O.J. (1989). Important bird areas in the Republic of Ireland. In: Grimmett, R.F.A. and Jones, T.A. (eds). Important Bird Areas in Europe. ICBP Technical Publication No. 9. Cambridge.

O'Donoghue, P.D. and O'Halloran, J. (1994). The behaviour of a wintering flock of whooper swans Cygnus cygnus at Rostellan Lake, Cork. Biology and Environment, Proceedings of the Royal Irish Academy 94B: 109-118.

Sheppard, R. (1993). Ireland's Wetland Wealth. IWC, Dublin.

Smiddy, P., O'Halloran, J., Coveney, J.A., Leonard, P.G. and Shorten, M. (1995). Winter waterfowl populations of Cork Harbour: an update. Irish Birds 5: 285-294.

Wilson, J., O'Mahony, B. and Smiddy, P. (2000). Common Terns Sterna hirundo breeding in Cork Harbour. Irish Birds 6: 597-599.

5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES

5.1. DESIGNATION TYPES at National and Regional level:

CODE	% COVER
IE05	10

5.2. RELATION OF THE DESCRIBED SITE WITH OTHER SITES:

designated at National or Regional level:

TYPE CODE	SITE NAME	OVERLAP TYPE	% COVER
IE05	Douglas Estuary Wildfowl Sanctuary	+	10

designated at International level:

5.3. RELATION OF THE DESCRIBED SITE WITH CORINE BIOTOPE SITES:

CORINE SITE CODE	OVERLAP TYPE	% COVER
800000079		

6. IMPACTS AND ACTIVITIES IN AND AROUND THE SITE

6.1. GENERAL IMPACTS AND ACTIVITIES AND PROPORTION OF THE SURFACE OF THE SITE AFFECTED

IMPACTS AND ACTIVITIES WITHIN the site

CODE	INTENSITY	% OF SITE	INFLUENCE
200	**A** B C	1	+ **0** -
622	A **B** C	10	+ 0 -
701	A **B** C	50	+ 0 -
210	A B **C**	5	+ **0** -
220	A **B** C	10	+ **0** -
520	A **B** C	10	+ **0** -
621	A **B** C	20	+ **0** -
626	A **B** C	20	+ 0 -

IMPACTS AND ACTIVITIES AROUND the site

CODE	INTENSITY	INFLUENCE
400	**A** B C	+ 0 -
410	**A** B C	+ 0 -
403	A B **C**	+ **0** -
120	A **B** C	+ **0** -
502	**A** B C	+ 0 -
504	**A** B C	+ 0 -

6.2. SITE MANAGEMENT AND PLANS

BODY RESPONSIBLE FOR THE SITE MANAGEMENT

The National Parks and Wildlife Service is responsible for managing the Douglas Estuary as a Wildfowl Sanctuary.

SITE MANAGEMENT AND PLANS

A Conservation Plan for the management of this site is in preparation.

7. MAPS OF THE SITE

- Physical map

- Aerial photograph(s) included:

8. SLIDES

APPENDIX C

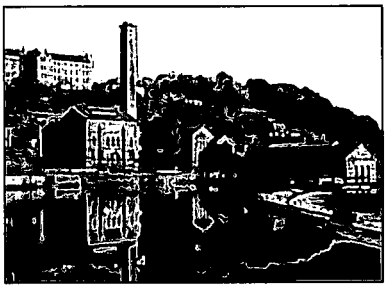
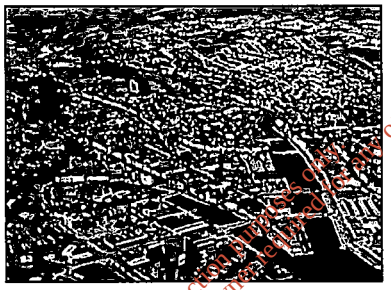
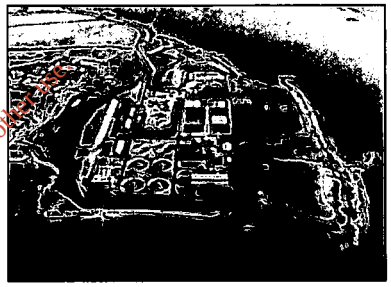
Strategic Environmental Assessment of the Cork City Development Plan 2009–2015.

SEA STATEMENT

OF THE

CORK CITY DEVELOPMENT PLAN 2009-2015

STRATEGIC ENVIRONMENTAL ASSESSMENT

For: **Cork City Council**

City Hall

Cork

By: **CAAS (Environmental Services)**

4th Floor, 7 Red Cow Lane

Smithfield

Dublin 7

MAY 2009

BACK TO CONTENTS

Table of Contents

Section 1 Introduction

1.1 Terms of Reference

This is the SEA Statement of the Cork City Development Plan 2009-2015 Strategic Environmental Assessment.

1.2 SEA Definition

SEA is a systematic process of predicting and evaluating the likely environmental effects of implementing a plan, or other strategic action, in order to ensure that these effects are appropriately addressed at the earliest appropriate stage of decision-making on a par with economic and social considerations.

1.3 Legislative Context

Directive 2001/42/EC of the European Parliament and of the Council, of 27 June 2001, on the assessment of the effects of certain plans and programmes on the environment, referred to hereafter as the SEA Directive, introduced the requirement that SEA be carried out on plans and programmes which are prepared for a number of sectors, including land use planning.

The SEA Directive was transposed into Irish Law through the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (SI No. 435 of 2004), and, the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No. 436 of 2004). Both sets of regulations became operational on 21 July 2004.

The SEA Directive and the instruments transposing it into Irish Law require that after the adoption of a plan or programme, the plan or programme making authority is required to make a Statement available to the public, the competent environmental authorities and, where relevant, neighbouring countries. This Statement is referred to as an SEA Statement (DEHLG, 2004)[1].

[1] Department of the Environment, Heritage and Local Government (2004) *Implementation of SEA Directive (2001/42/EC): Guidelines for Regional Authorities and Planning Authorities* Dublin: Government of Ireland.

1.4 Content of the SEA Statement

The SEA Statement is required to include information summarising:

a) how environmental considerations have been integrated into the plan,

b) how

- the environmental report,
- submissions and observations made to the planning authority on the proposed Plan and Environmental Report, and
- any transboundary consultations [this is not relevant to this SEA]

have been taken into account during the preparation of the plan,

c) the reasons for choosing the plan, as adopted, in the light of the other reasonable alternatives dealt with, and

d) the measures decided upon to monitor the significant environmental effects of implementation of the plan.

1.5 Implications of SEA for the Plan

As a result of the aforementioned legislation, the review of the Cork City Development Plan was required to undergo SEA.

The findings of the SEA were expressed in a Draft Environmental Report which was submitted to the Elected Members alongside the proposed Draft Plan. The purpose of the report was to provide a clear understanding of the likely environmental consequences of decisions regarding the future accommodation of growth in Cork City.

Changes made to the proposed Draft Plan were evaluated for their environmental consequences and the Draft Environmental Report was updated to become the Environmental Report.

BACK TO TOP

The Environmental Report and the Draft Plan were placed on public display in August 2008.

Amendments made to the Draft Plan at each stage of the process which followed this period of public display were evaluated for their environmental consequences and these were presented to the Elected Members in the form of Addenda. On adoption of the Draft Plan, these Addenda were used to update the original Environmental Report into a final Environmental Report which accompanies the adopted Plan.

These amendments included alterations of, additions to and removal of Draft Plan provisions.

At each stage of the process the Elected Members were required by the legislation to take into account the findings of the Environmental Report.

Section 2 How Environmental Considerations were integrated into the City Development Plan

2.1 Consultations

The Environmental Protection Agency (EPA), the Department of the Environment, Heritage and Local Government (DEHLG) and the Department of Communications, Marine and Natural Resources (DCMNR) were all sent SEA scoping notices indicating that submissions or observations in relation to the scope and level of detail of the information to be included in the Environmental Report could be made to Cork City Council. An initial consultation meeting was held with the EPA in August 2007 and the information put forward by the EPA at this meeting was taken into account in the formulation of the scope of the SEA.

Further submissions were made by the EPA and the DEHLG on the City Development Plan and Environmental Report while they were on public display. These submissions resulted in updating a number of parts of the Environmental Report.

Further information on how the outputs of scoping consultations informed the process is provided under Section 3.2.

2.2 Environmental Sensitivities

2.2.1 Mapping and Early Communication

Environmental considerations were integrated into the Draft Plan before it was placed on public display for the first time.

Environmental sensitivities were mapped in order to identify which areas of the City would be most sensitive to development and would suffer the most adverse effects if growth was to be accommodated in those areas unmitigated.

The sensitivities were communicated to the Plan-making team on a regular basis from the outset of the Plan preparation process. Identifying areas with the most limited carrying capacity in the City helped future growth to be diverted away from these areas.

The sensitivities considered by the SEA included the following:

- Designated ecological sites;
- Land cover;
- Soil Type;
- Water Framework Directive (WFD) Risk Assessments for Surface Water Catchments, Transitional Waters and Ground Waters;
- WFD Register of Protected Areas;
- EPA River Water Quality Monitoring;
- EPA 2001-2005 Assessment of Trophic Status of Estuaries and Bays 2001-2005;
- Changes in Estuarine and Bay Water Quality between the monitoring periods 1999-2003 and 2001-2005;
- GSI Aquifer Vulnerability;
- Flooding Data;
- IPPC licensed facilities and Waste Licensed facilities;
- Seveso II Sites and Buffers
- Waste Water Treatment Infrastructure/Capacity Needs;
- Drinking water supply;
- Drinking water quality;
- Archaeological Heritage;
- Architectural Heritage; and,
- Visual Analysis including landscape sensitivities.

A number of these sensitivities are mapped on Figure 2.1 and Figure 2.2.

Overlay mapping

A Geographical Information System (GIS) was used in order to weight the above sensitivities and map them overlapping each other - this allowed the identification of where where most sensitivities within and surrounding the City occur. Figure 2.4 shows the overlay map of sensitivities that was use by the SEA.

Environmental sensitivities are indicated by colours which range from extreme vulnerability (red) to high vulnerability (orange) to moderate

BACK TO TOP

vulnerability (yellow) and low vulnerability (green). Where the mapping shows a concentration of environmental sensitivities there is an increased likelihood that development will conflict with these sensitivities and cause environmental deterioration. This is particularly the case where the cumulative development of small-scale projects gradually causes a slow deterioration of a resource.

2.3 Early Identification and Evaluation of Alternatives

A range of potential alternative scenarios for the types of planning strategies adopted for the City Development Plan were identified at an early stage in the process and evaluated for their likely significant environmental effects see Section 4.

The environmental sensitivities mapping shown on Figure 2.1, Figure 2.2, Figure 2.3 and Figure 2.4 was used in order to predict and evaluate the environmental effects of implementing the scenarios.

Communication of the findings of this evaluation helped the Plan-making team to make an informed choice as to which alternative was to be put before the Elected Members as the proposed Plan.

Communication of this evaluation to the Elected Members through the Environmental Report helped the Elected Members to make an informed choice with regard to the making of the City Development Plan.

Mitigation measures which arose from the evaluation and which were recommended for integration into the Plan are detailed under Section 2.4 of this report.

BACK TO TOP

2.4 Mitigation

2.4.1 Introduction

In order to comply with various statutory requirements and in order to comply with the requirements of the statutory consultees, mitigation measures[2] were recommended to be integrated into the Plan.

The topics which these mitigation measures cover are as follows:

- Biodiversity and Flora and Fauna
- Contaminated Soils
- Water and Waste Water
- Flooding
- Drinking Water
- Archaeological Heritage
- Architectural Heritage
- Landscape

The mitigation measures are detailed in Section 9 of the Environmental Report and reproduced on the following pages.

[2] Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing a human action, be it a plan, programme or project. Mitigation measures can be roughly divided into those that: prevent effects; reduce the magnitude or extent, probability and/or severity of effect; repair effects after they have occurred, and; compensate for effects, balancing out negative impacts with other positive ones. Where there are likely to be significant negative effects, consideration should be given in the first instance to preventing these effects or, where this is not possible, to reducing the effects.

BACK TO TOP

Mitigation measure	Reason for inclusion	Integration into Plan
Biodiversity and Flora and Fauna I The plan shall support achieving the objectives and actions contained in the Cork City Draft Biodiversity Action Plan 2008 - 2013 (Cork City Council, 2008).	Compliance with Habitats Directive	Integrated through Policy 10.15
Biodiversity and Flora and Fauna II No projects giving rise to significant adverse direct, indirect or secondary impacts on Natura 2000 sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this Plan (either individually or in combination with other plans or projects)[3].	Compliance with Habitats Directive	Integrated through Policy 10.9
Biodiversity and Flora and Fauna III Where required, all land use plans and projects arising from this plan will be screened for the need to undertake Appropriate Assessment under Article 6 of the Habitats Directive.	Compliance with Habitats Directive	Integrated through Policy 10.9
Contaminated Soils I The findings of the 2007 South Docklands Contamination Study show that areas within the Docklands have been contaminated to the extent that under certain circumstances they may pose a risk to human health. As other sites within the wider Cork City area have in the past been host to land uses similar to the heavy industry and fuel generation/ storage depots uses of the South Docklands, additional contaminated sites may exist. A study shall be undertaken in order to identify such contaminated sites and to suggest measures for their safe rehabilitation.	Protection of Human Health and Quality of Environmental Receptors	Integrated partially through Policies 12.29 and 12.30
Water and Waste Water I Development under the Plan shall be preceded by sufficient capacity in the public waste water treatment plant and appropriate extensions in the existing public waste water treatment catchment.	Compliance with Water Framework Directive and Urban Waste Water Treatment Directive (91/271/EEC) (amended by Directive 98/15/EEC)	Integrated through various Plan provisions including Environmental Infrastructure and Management Aim and Overall Objectives and Policy 12.3
Water and Waste Water II Where appropriate the relevant policies and objectives of the South Western River Basin Management Plan and associated programme of measures shall be integrated into the City Development Plan when available.	Compliance with Water Framework Directive	Integrated through Policy 12.14
Water and Waste Water III Landuses shall not give rise to the pollution of ground or surface waters during the construction or operation of developments. This shall be achieved through the adherence to best practice in the design, installation and management of systems for the interception, collection and appropriate disposal or treatment of all surface waters and effluents. It is the policy of Cork City Council to protect the city's ground water resource as a possible future potable water supply for the city. Development which threatens the quality of the City's groundwater will not be permitted.	Compliance with Water Framework Directive	Integrated through various Plan provisions including Policies 12.16 and 12.14
Flooding I The Plan shall be updated as necessary in order to integrate the relevant Lee Catchment Flood Risk Assessment and Management Study management options.	Minimisation of flood risk	Integrated through Policy 12.10

[3] Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:
(a) no alternative solution available,
(b) imperative reasons of overriding public interest for the plan to proceed; and
(c) adequate compensatory measures in place.

BACK TO TOP

Mitigation measure	Reason for inclusion	Integration into Plan
Flooding II The EPA's *Climate Change: Scenarios and Impacts for Ireland* report (2003)[4] states that the recommendations outlined by Carter (1990)[5] (subject to one modification) remain a sensible approach to coastal management for sea level change. These recommendations are as follows: • no new building or new development within 100 m of 'soft' shoreline (Carter (1990) advocated a distance of 50 m); • no further reclamation of estuary land; • no removal of sand dunes, beach sand or gravel; and, • all coastal defence measures to be assessed for environmental impact. The CDP shall require new developments to comply with these measures.	Minimisation of flood risk	Integrated indirectly and partially through Policies 12.10, 12.11, 12.12 and 12.13
Flooding III Where possible - the landward migration of coastal features, such as dunes and marshes, shall be facilitated as these features form an integral part of the coastal system - both physically and ecologically - and provide protection against wave energy through dissipation.	Minimisation of flood risk	Integrated indirectly and partially through Policies 12.10, 12.11, 12.12 and 12.13
Flooding IV It is the policy of Cork City Council to have regard to the recommendations and provisions of the Department of the Environment, Heritage and Local Government planning guidelines entitled "The Planning System and Flood Risk Management" in the preparation of plans (both statutory and non statutory) and assessment of planning applications when adopted.	Compliance with Government planning guidelines entitled "The Planning System and Flood Risk Management" when adopted.	Integrated through Policy 12.12
Flooding V Landuses shall not give rise to increases in the run-off characteristics above those that currently exist.	Minimisation of flood risk	Integrated through Policies 12.9, 12.11 and 12.13
Drinking Water I Existing and new populations under the CDP shall be served with clean and wholesome drinking water. Cork City Council will achieve compliance as a minimum with the 48 parameters set out under the European Communities (Drinking Water) Regulations (No. 2) 2007 and will resolve any outstanding issues in order to achieve the removal of the City's public water supply from the EPA remedial action list of public water supplies.	Compliance with European Communities (Drinking Water) Regulations (No.2), 2007.	Integrated through various Plan provisions including Policies 12.1, 12.2, 12.3 and 12.5
Archaeological Heritage I Landuses shall not give rise to significant losses of the integrity, quality or context of archaeological material - except as may be conditioned or directed by the appropriate heritage agencies. This shall be achieved by the application of appropriate design standards and criteria.	Compliance with Valletta Convention 1992 and National Monuments Acts	Integrated through various Plan provisions including Policies 9.2, 9.3, 9.4, 9.5, 9.6 and 9.11
Archaeological Heritage II It shall be ensured that pre-development archaeological testing, surveying, monitoring and recording are carried out where appropriate.	Compliance with Valletta Convention 1992 and National Monuments Acts	Integrated through various Plan provisions including Policies 9.12, 9.17 and 9.16

[4] Department of Geography, National University of Ireland, Maynooth (2003) *Environmental RTDI Programme 2000–2006 Climate Change: Scenarios and Impacts for Ireland (2000-LS-5.2.1-M1) Final Report* Wexford: Environmental Protection Agency

[5] Carter, R.W.G. (1990) *Sea level changes. In: McWilliams, B. (ed.) Climate Change: Studies on the Implications for Ireland.* pp. 110–151: Dublin: Government of Ireland.

BACK TO TOP

Mitigation measure	**Reason for inclusion**	**Integration into Plan**
Architectural Heritage I In order to protect, strengthen and improve the presentation and the general character of Cork City, alterations and interventions to Protected Structures shall be executed to the highest conservation standards (Venice Charter and subsequent ICOMOS Charters), and shall not detract from their significance or value.	Compliance with Planning and Development Act 2000 and Architectural Heritage and Historic Monuments Act 1999	Integrated through Policies 9.21 and 9.23
Architectural Heritage II New developments shall contribute to improving their surrounding neighbourhood, and not result in any significant loss in the integrity, quality or character of the area, where appropriate. Planning applications for developments in sensitive areas shall be accompanied by an assessment undertaken by an accredited conservation architect, where appropriate, detailing the impacts of the relevant development upon the special interest and character of the surrounding architectural heritage. Cork City Council shall be consulted at an early stage in this regard in order to determine whether there is a need for such an assessment or for specific mitigation measures.	Compliance with Planning and Development Act 2000 and Architectural Heritage and Historic Monuments Act 1999	Integrated through various Plan provisions including Policies 9.21, 9.22, 9.23, 9.24, 9.27, 9.28, 9.29, 9.31 and 9.30
Architectural Heritage III The Record of Protected Structures shall be extended on a phased basis in order to incorporate recommendations from the National Inventory of Architectural Heritage.	Compliance with Planning and Development Act 2000 and Architectural Heritage and Historic Monuments Act 1999	Integrated partially through Policy 9.19
Landscape I The Cork City Landscape Strategy makes recommendations and guidelines in relation to the key landscape elements as well a number of key sites. These recommendations are applied to the City Development Plan and shall be adhered to by development granted permission under the Plan.	Protection of the landscape	Integrated through Policies 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8

Section 3 Environmental Report and Submissions & Observations

3.1 Introduction

This section details how both the Environmental Report and submissions and observations made to the planning authority on the Environmental Report and SEA process have been taken into account during the preparation of the plan.

3.2 SEA Scoping Consultations

The EPA, DEHLG and DCMNR were all sent SEA scoping notices indicating that submissions or observations in relation to the scope and level of detail of the information to be included in the Environmental Report could be made to Cork City Council. An initial consultation meeting was held with the EPA in August 2007 and the information put forward by the EPA at this meeting was taken into account in the formulation of the scope of the SEA.

3.3 Submissions and Observations

Submissions were made by the EPA and the DEHLG on the City Development Plan and Environmental Report while they were on public display.

The submission from the EPA raised a number of points with regard to the following topics:

- Integration of SEA and Plan;
- Water;
- Water Framework Directive;
- Drinking Water;
- Waste Water Treatment;
- Water Conservation;
- Groundwater Protection;
- Bathing Water;
- Flood Prevention;
- Biodiversity;
- Habitat and Wetland Mapping;
- EU Protected Habitats and Species in Ireland;
- Non- Designated Habitats and Species;
- Alien species and Noxious Weeds;
- Cultural Heritage and Landscape;
- Air and Climatic Factors;
- Strategic Environmental Assessment;
- SEA and Infrastructure Planning;
- Obligations with respect to national and EU Environmental Legislation;
- Environmental Report - Consultation;
- Environmental Report - Existing Environment;
- Environmental Report - Environmental Objectives;
- Environmental Report - Assessment of Environmental Effects;
- Environmental Report - Mitigation Measures;
- Environmental Report - Monitoring Measures; and,
- Appropriate Assessment.

This submission resulted in updating Section 9 (Mitigation Measures) of the Environmental Report. Also, a new Strategic Environmental Objective (SEO) was added to the Environmental Report and used in order to facilitate the evaluation of effects on flooding which would be likely to occur as a result of implementing the Plan and the alternatives.

The submission from the DEHLG noted, among other things, that archaeological issues were satisfactorily outlined in the report.

No changes were made to the Environmental Report arising from the DEHLG submission.

3.4 Environmental Report

The findings of the SEA were expressed in a Draft Environmental Report which was submitted to the Elected Members alongside the proposed Draft Plan. The purpose of the report was to provide a clear understanding of the likely environmental consequences of decisions regarding the future accommodation of growth in Cork City.

Changes made to the proposed Draft Plan were evaluated for their environmental consequences and the Draft Environmental Report was updated to become the Environmental Report.

The Environmental Report and the Draft Plan were placed on public display in August 2008.

BACK TO TOP

Amendments made to the Draft Plan at each stage of the process which followed this period of public display were evaluated for their environmental consequences and these were presented to the Elected Members in the form of Addenda. On adoption of the Draft Plan, these Addenda were used to update the original Environmental Report into a final Environmental Report which accompanies the adopted Plan.

These amendments included alterations of, additions to and removal of Draft Plan provisions.

At each stage of the process the Elected Members were required by the legislation to take into account the findings of the Environmental Report.

Environmental considerations have also been integrated into the adopted Plan through a number of mitigation measures including certain measures which are set out in Section 9 of the Environmental Report.

Section 4 Alternatives and the Plan

4.1 Introduction

This section summarises the alternative scenarios for the City Development Plan which were identified and evaluated for likely environmental and planning effects as part of the SEA process and identifies the reasons for choosing the Plan, as adopted, in the light of the other reasonable alternatives dealt with.

4.2 Summary Description of Alternative Scenarios

4.2.1 Scenario 1 – Minimalist Approach

Taking a more cautious and restrained approach to new development Scenario 1 - *Minimalist Approach* (see Figure 4.1) prioritises the protection of the City's natural environment together with the amenity and character of existing residential areas.

The entire plan area under this scenario would be covered by blanket policies providing for conservation and protection. Limited brownfield development would be allowed in the docklands. Limited expansion would be allowed within District Centres.

This scenario would involve the adoption of planning policies which seek to maintain the status quo as far as possible and limit the development potential of growth areas and brownfield sites to reflect the established pattern and character of development in the City.

New development would be limited in terms of scale and would manifest itself in the form of lower density development. This would restrain Key Development Areas from attaining a sustainable mix of population and employment and providing the critical mass of activity to sustain an integrated public transport network for the City.

4.2.2 Scenario 2 – Selective Concentrations

Taking a more balanced approach to new development Scenario 2 - *Selective Concentrations* (see Figure 4.2) - seeks to focus higher density development in suitable strategic locations throughout the City while protecting the residential amenity and character of established residential areas by restricting inappropriately scaled and designed development.

Under this scenario, Key Development Areas would be developed / redeveloped to accommodate a higher level of new urban development and deliver the maximum quantitative efficiency of new population density and commercial floorspace. Key Development Areas identified under this scenario include Blackpool, Docklands and South Mahon with Future Development Areas identified at Tivoli and Tramore Road.

Development within the Blackpool and Docklands Key Development Areas would be likely to proceed in the short term as the strategies for these areas are sufficiently developed at present through the current Development Plan or Local Area Plans. Local Area Plans would be a prerequisite for redevelopment within Mahon and the Tivoli and Tramore Road Future Development Areas.

District Centres under this scenario - which traditionally were mainly retail centres - would be planned in order to evolve into mixed use urban centres, providing a range of services and employment to their local population. A new District Centre would be proposed for the North-West of the City.

4.2.3 Scenario 3 – Market-led Approach

Scenario 3 - *Market-led Approach* - involves the relaxation of planning controls throughout the City creating a situation where favourable consideration is given to higher density development in all areas with less weight given

to existing residential or architectural character or environmental amenity.

The scenario would be likely to result in a dispersed pattern of growth with sporadic pockets of high density development scattered throughout the City predominantly in the southside.

The location and nature of development would be completely dependent upon market demand and applications would be evaluated on a case-by-case basis by the Council. Although the locations where development would occur are difficult to predict, development would likely be disproportionately spread throughout the south side of the City, centering on established growth and employment areas like Bishopstown, Douglas, and Mahon. If development occurred in this fashion it would be likely that the north of the City and areas with and adjacent to the RAPID areas would be neglected.

A number of the City's informal green spaces, established sports grounds and currently protected landscape ridges would be open to speculative development. Both these and brownfield sites would be considered suitable for high density, higher rise development with pockets of intensely developed urban areas arising. The consequent transformation of the skyline and character of Cork City would be significant.

District Centres under this scenario would be likely to continue to accommodate retail growth with mixed use urban development rare or non-existent at these locations. Expansion of these centres would be uncontrolled and would respond to market demand. This would likely result in a deterioration in the economic vitality of the City Centre and an inequitable growth of established District Centres on the Southside to the neglect of the northside.

Development would be less concentrated and spread over wider areas than would be the case with regard to Scenario 2. Development within these areas would not be required to adhere to the strategies that have been developed through the current Development Plan and/or Local Area Plans.

Due to the unpredictability of development under this scenario no mapping of likely development arising has been provided.

4.3 Summary Evaluation of Alternative Scenarios

4.3.1 Scenario 1 – *Minimalist Approach*

The economic and social implications of this scenario would be significantly negative. The adoption of this scenario would mean that the City's remaining development capacity would be realised in a very short period of time placing intense pressure on the City's already tight administrative boundary. As a consequence the positive regeneration benefits which would be released by the redevelopment of Key Development Areas for more intensive urban development would be compromised and in the longer term problems of urban decay and decline would result. Development under this scenario would be pushed out into the City's suburbs beyond the administrative boundary.

Protecting the City's natural environment and ensuring a degree of stability and certainty in established residential areas with regard to their future development makes for sound planning. However, to ensure that the City's current form and character determines the future shape and scope of the City would in the long run be to the detriment of the City's social, economic and environmental fabric overall.

A purely minimalist approach runs contrary to national planning policy which seeks higher density development on City centre, inner suburban and brownfield sites in order to minimise suburban sprawl and maximise investment in high quality public transport systems. To encourage a scenario where the established urban fabric and environment dictate the extent, scale and form of all new development would be to curb modernisation and sustainability in the City's transport system, architecture and urban form. It would serve to impact negatively on the City's economy as business would be forced to locate outside the City to achieve the floor areas and scale of development needed to prosper and from a transport perspective the City would fail to achieve the critical mass necessary to develop a high quality integrated public transport system - it would be unlikely that the two Indicative Rapid Transport Corridors would be realised under this scenario.

As a result of the minimalist and protectionist approach taken by this scenario, the RAPID (Revitalising Areas by Planning, Investment and Development) Areas - the areas with the highest level of economic and social deprivation which are in need of good access to services and employment as well as an upgraded environment - within the City would be unlikely to significantly improve under this scenario and would be likely to further decay and decline.

4.3.2 Scenario 2 – *Selective Concentrations*

The approach taken by Scenario 2 - *Selective Concentrations* - is consistent with national planning policy and aims to maximise urban development on inner suburban and brownfield sites in order to minimise suburban sprawl and maximise investment in high quality public transport systems. The more intensive urban development provided for by this scenario would enable the delivery of a critical mass of population to underpin new infrastructure and services; in particular, a high quality public transport service for the City.

With future population and economic growth targeted at these key areas, other areas - including existing residential areas - would experience development relative to their carrying capacity which would facilitate the protection of the character and amenity of these areas.

By accommodating new populations through the redevelopment of strategic development areas and key brownfield sites within the plan area this approach would reduce the need to accommodate these populations by way of greenfield development across the wider Cork metropolitan region and facilitate the development of sustainable communities where population and employment is developed in union thereby reducing travel to work times and traffic congestion and encouraging sustainable living patterns. By helping to reduce pressure on

greenfield land adverse environmental impacts across the region would be reduced.

By providing for targeted development including that identified at the Docklands, South Mahon and Tramore Road, this scenario would be more likely than Scenarios 1 or 3 to enable the realisation of two Indicative Rapid Transport Corridors.

By providing a framework for targeting certain growth within and close by RAPID areas this scenario would be likely to provide local populations with a greater access to services and employment as well as an upgraded environment thereby helping to overcome the economic and social deprivation found within these areas.

4.3.3 Scenario 3 – *Market-led Approach*

Encouraging higher densities on all infill and brownfield sites, both within inner mixed use urban areas and outer predominantly residential suburban areas of the City, would result in a dispersed pattern of settlement in the City with sporadic pockets of high density development scattered throughout the City predominantly in the southside.

The absence of a coherent settlement strategy for the delivery of high density development in the City would compromise the delivery of a proper public transport system and contribute to the development of a disjointed and chaotic building form in the City.

Opening the City's sports grounds and ridge landscapes to speculative development would place important community infrastructure and the City's defining landscape assets under threat and possibly render them lost or irreparably damaged for future generations.

Established residential communities would lack a certainty regarding their development future and de-prioritising issues of building and natural heritage conservation, character and context would be to the neglect of the City's rich history and culture.

The location and nature of development would be completely dependent upon market demand and applications would be evaluated on a case-by-case basis by the Council. Although the locations where development would occur are difficult to predict, development would likely be disproportionately spread throughout the south side of the City, centering on established growth and employment areas like Bishopstown, Douglas, and Mahon. If development occurred in this fashion it would be likely that the north of the City and areas with and adjacent to the RAPID areas would be neglected.

The loose planning controls under this scenario would be likely to result in a more dispersed development across the plan area. Such development would not support the development of the two Indicative Rapid Transport Corridors which would be more likely to be achieved by Scenario 2.

	Likely to **Improve** status of SEOs	Probable **Conflict** with status of SEOs - unlikely to be mitigated	Potential **Conflict** with status of SEOs - would be mitigated	**Uncertain** interaction with status of SEOs
Alternative Scenario 1 *Minimalist Approach*	**Inside the plan area:** • Designated and Non-Designated Ecology • Human Health • Water Quality & Waste Water Treatment • Cultural Heritage • The Landscape • Flooding	**Inside the plan area:** • Greenhouse Gas Emissions & Car dependency • Brownfield development **Outside the plan area:** • Water Quality & Waste Water Treatment • Human Health • Greenhouse Gas Emissions & Car dependency • The Landscape • Non- Designated Ecology	**Outside the plan area:** • Designated Ecology • Flooding	
Alternative Scenario 2 *Selective Concentrations*	**Inside the plan area:** • Water Quality & Waste Water Treatment • Human Health • Greenhouse Gas Emissions and Car dependency • Brownfield Development **Outside the plan area:** • Designated and Non-Designated Ecology • Water Quality & Waste Water Treatment • Human Health • Greenhouse Gas Emissions & Car dependency • The Landscape • Flooding		**Inside the plan area:** • Designated and Non-Designated Ecology • The Landscape • Cultural Heritage • Human Health • Flooding	
Alternative Scenario 3 *Market-led Approach*	**Inside the plan area:** • Brownfield Development **Outside the plan area:** • Designated and Non-Designated Ecology • Water Quality & Waste Water Treatment • Human Health • Greenhouse Gas Emissions & Car dependency • The Landscape • Flooding	**Inside the plan area:** • Water Quality & Waste Water Treatment • Human Health • The Landscape • Cultural Heritage • Non- Designated Ecology • Flooding	**Inside the plan area:** • Designated Ecology	**Inside the plan area:** • Greenhouse Gas Emissions & Car dependency

Table 4.1 Evaluation of Alternative Scenarios against SEOs showing how Scenarios 1 and 3 have more areas of likely conflict with the existing environment than Scenario 2.

4.4 Reasons for choosing the plan, as adopted, in light of the other reasonable alternatives dealt with

The Alternatives that were analysed were produced at an earlier - more embryonic - stage to facilitate evaluation and selection of a plan - having regard, *inter alia* to environmental consequences.

On the basis of the analysis provided in the Environmental Report which is summarised above, **Scenario 1 *Minimalist Approach*** would be likely to be detrimental to the environment outside the City's boundary as it would be likely to give rise to a high frequency and magnitude of significant, adverse, cumulative, secondary environmental effects as a result of development occurring outside of the City boundary. The economic and social implications of this scenario would be significantly negative.

Scenario 3 *Market-led Approach* would be likely to be detrimental to the environment within the City boundary as it would give rise to a high frequency and magnitude of significant adverse environmental effects.

Scenario 2 *Selective Concentrations* would be likely to result in the most beneficial effects with regard to the protection of the environment - both within and outside of the City. This scenario would be likely to result in the least amount of unmitigatable environmental effects. Consequently, Scenario 2 emerges as the most environmentally sustainable option.

In addition, having regard to planning considerations - including social and economic effects - Scenario 2 *Selective Concentrations* provides a better balance between environmental protection and economic and social development than the other two scenarios.

The City Development Plan that emerged from the Plan preparation process has a close correlation to Scenario 2. Although Scenario 2 potentially conflicts with a number of environmental objectives and could potentially cause a number of significant adverse environmental effects, the City Development Plan which has been developed with reference to this scenario has integrated into it a number of objectives which mitigate against these conflicts and effects.

Section 5 Monitoring Measures

5.1 Introduction

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored. The Environmental Report puts forward proposals for monitoring the likely significant environmental effects of implementing the City Development Plan (CDP) which are detailed below.

Monitoring enables, at an early stage, the identification of unforeseen adverse effects and the undertaking of appropriate remedial action. In addition to this, monitoring can also play an important role in assessing whether the CDP is achieving its environmental objectives and targets - measures which the CDP can help work towards - whether these need to be reexamined and whether the proposed mitigation measures are being implemented.

5.2 Indicators and Targets

Monitoring is based around the indicators which were chosen earlier in the process. These indicators allow quantitative measures of trends and progress over time relating to the Strategic Environmental Objectives used in the evaluation. Focus is given to indicators which are relevant to the likely significant environmental effects of implementing the CDP and existing monitoring arrangements will be used in order to monitor the selected indicators. Each indicator to be monitored will be accompanied by the relevant target(s) which were identified with regard to the relevant legislation.

Table 5.1 overleaf shows the indicators and targets which have been selected with regard to the monitoring of the Plan.

5.3 Sources

Measurements for indicators should come from existing monitoring sources and no new monitoring should be required to take place. Existing monitoring sources exist for each of the indicators and include those maintained by Cork City Council and the relevant authorities e.g. the Environmental Protection Agency, the National Parks and Wildlife Service and the Central Statistics Office.

The *Development Management Process* in Cork City Council will provide passive monitoring of various indicators and targets on an application by application basis. Where significant adverse effects - including positive, negative, cumulative and indirect - are likely to occur upon, for example, entries to the RMP, entries to the RPS or ecological networks as a result of the undertaking of individual projects or multiple individual projects such instances should be identified and recorded and should feed into the monitoring evaluation.

5.3.1 Excluded Indicators and Targets

As noted on Table 5.1 overleaf, monitoring data on Indicator W3 (Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC) may not be available for the preliminary monitoring evaluation as the groundwater threshold values to which this indicator relates have not yet been identified by the EPA.

In addition, future monitoring data for Indicators C1i (Percentage of population within the plan area travelling to work or school by public transport or non-mechanical means) and C1ii (Average distance travelled to work or school by the population of the CASP region) will not be available until the results of the next CSO Census are made available. It is recommended that data for these indicators be sourced for the SEA of the next review of the Plan.

5.4 Reporting

A preliminary monitoring evaluation report on the effects of implementing the CDP will be prepared to coincide with the Manager's report to the elected members on the progress achieved in securing CDP objectives within two years of the making of the plan (this Manager's report is required under section 15 of the 2000 Planning Act).

5.5 Responsibility

Cork City Council is responsible for collating existing relevant monitored data, the preparation of a monitoring report, the publication of this report and, if necessary, the carrying out of corrective action.

It is recommended that a Steering Committee be established to oversee the monitoring process.

5.6 Thresholds

Thresholds at which corrective action will be considered are as follows:

- boil notices on drinking water;
- fish kills;
- court cases taken by the DEHLG regarding impacts upon archaeological heritage including entries to the Record of Monuments and Places; and,
- complaints received from statutory consultees regarding avoidable impacts resulting from development which is granted permission under the CDP.

Environmental Component	Selected Indicator(s)	Selected Target(s)	Source
Biodiversity, Flora and Fauna	B1: Percentage of relevant habitats and designated ecological sites lost as a result of implementation of the CDP	B1: No losses of relevant habitats, species or their sustaining resources in designated ecological sites as a result of implementation of the CDP	CORINE Mapping, DEHLG Records & Development Management Process in Cork City Council
	B2: Number of significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites as a result of implementation of the CDP	B2: No significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites as a result of implementation of the CDP	Development Management Process in Cork City Council & Consultation with the National Parks and Wildlife Service
	B3: Percentage loss of connectivity between areas of local biodiversity as a result of implementation of the CDP – as evidenced from a resurvey of the Data contained in Fig 3.22 and CORINE mapping	B3: No ecological networks or parts thereof which provide significant connectivity between areas of local biodiversity to be lost without remediation as a result of implementation of the CDP	Remote sensing of trees and hedges combined with CORINE mapping
Population and Human Health	HH1: Occurrence (any) of a spatially concentrated deterioration in human health	HH1: No spatial concentrations of health problems arising from environmental factors	Cork City Council, EPA, Health and Safety Authority
Soil	S1: Area of brownfield land developed during plan period.	S1: Reduced availability of brownfield land (subject to availability on the open market, the demand for such land and the ability for such lands to be sustainably re-used within the provisions of the CDP) at the end of the CDP lifespan	Development Management Process in Cork City Council

Environmental Component	Selected Indicator(s)	Selected Target(s)	Sources
Water	W1: Biotic Quality Rating (Q Value)	W1i: To maintain a biotic quality rating of Q4, in line with the requirement to achieve good water status under the Water Framework Directive, by 2015 W1ii: To improve biotic quality ratings, where possible, to Q5	EPA
	W2: Trophic Status (ATSEBI)	W2: To maintain or to improve trophic status, where relevant, to unpolluted in line with the requirement to achieve good water status under the Water Framework Directive, by 2015	EPA
	W3: Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC	W3: Compliance with Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC	As noted under Section 5.3.1, monitoring data may not be available for this indicator when the monitoring evaluation is being prepared.
	W4: Number of developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk	W4: Minimise developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk	Development Management Process in Cork City Council
Air and Climatic Factors	C1i: Percentage of population within the plan area travelling to work or school by public transport or non-mechanical means C1ii: Average distance travelled to work or school by the population of the CASP region	C1i: An increase in the percentage of the population travelling to work or school by public transport or non-mechanical means C1ii: A decrease in the average distance travelled to work or school by the population of the CASP region	Central Statistics Office: As noted under Section 5.3.1, future monitoring data may not be available for these indicators until results from the next Census are made available.

Environmental Component	Selected Indicator(s)	Selected Target(s)	Sources
Material Assets	M1: Number of new developments granted permission which cannot be adequately served by a public waste water treatment plant over the lifetime of the CDP	M1: No new developments granted permission which cannot be adequately served by a public waste water treatment plant over the lifetime of the CDP	Development Management Process in Cork City Council
Cultural Heritage	CH1: Number of unauthorised developments occurring which result in full or partial loss to entries to the Record of Monuments and Places - including Zones of Archaeological Potential - and the context of the above within the surrounding landscape where relevant.	CH1: No unauthorised developments occurring which result in full or partial loss to entries to the Record of Monuments and Places - including Zones of Archaeological Potential - and the context of the above within the surrounding landscape where relevant.	Development Management Process in Cork City Council
	CH2i: Number of unauthorised developments occurring which result in physical loss or loss entries to the Record of Protected Structures and/or their context within the surrounding landscape where relevant.	CH2i: No unauthorised developments occurring which result in physical loss or loss entries to the Record of Protected Structures and/or their context within the surrounding landscape where relevant.	Development Management Process in Cork City Council
	CH2ii: Number of additions to the Record of Protected Structures and the number of additional ACAs, where appropriate.	CH2ii: Make Additions to the Record of Protected Structures and make additional ACAs, where appropriate.	
Landscape	L1: Number of complaints received from statutory consultees regarding avoidable impacts on the landscape - especially with regard to the City's ridgelines, the panoramic and linear views of the City, the character of the City's Gateways, the iconic City Core and areas of high visual amenity - resulting from development which is granted permission under the CDP	L1: No developments permitted which result in avoidable impacts on the landscape - especially with regard to the City's ridgelines, the panoramic and linear views of the City, the character of the City's Gateways, the iconic City Core and areas of high visual amenity - resulting from development which is granted permission under the CDP	Development Management Process in Cork City Council

Table 5.1 Selected Indicators, Targets and Monitoring Sources

APPENDIX D

Environmental Impact Statement for the expansions of a Materials Recovery Facility at Country Clean Recycling, Churchfield Ind Est., John F. Connolly Road, Co Cork. January 2009

OES | consulting

Country Clean Recycling

Environmental Impact Statement

January 2009

Scotia Technology Ltd.
t/a OES Consulting
2nd Floor, FBD House, Fels Point, Tralee, Co. Kerry

T: 066 7128321 F: 066 7180061
Email: info@oes.ie

project management ● engineering ● safety ● environment

COUNTRY CLEAN RECYCLING

ENVIRONMENTAL IMPACT ASSESSMENT

Disclaimer

This document has been prepared on behalf of and for the exclusive use of **COUNTRY CLEAN RECYCLING** by OES Consulting on the basis of an agreed Programme of Work Scope.

Conclusions and recommendations contained in this Document are based on information supplied by the Client and others. Unless expressly stated otherwise, information provided by Third Parties has not been verified by OES Consulting.

OES Consulting accepts no liability or responsibility whatsoever in respect of any use of or reliance upon all or part of this Document by any third party.

Document No. R2_1094_01

Rev	Description	Origin	Review	Changes/Amendments	OES Approval	Date
0A	R2_1094	Em, EOL, EB	POL	R2_1094_0A	POL	20/07/08
01	R2_1094	Em, EOL, EB	POL	R2_1094_01	POL	18/01/09

Scotia Technology Ltd. T/a OES Consulting
Registered Office: 2nd Floor, FBD House, Fels Point, Tralee, Co. Kerry
Tel: 066 7128321 Fax: 066 7180061 Email: info@oes.ie
Registered Number: 376360

COUNTRY CLEAN RECYCLING

Environmental Impact Statement

January 2009

Contents

Attachments

Attachment A **Figures**

Figure 1.1	Site Location Map
Figure 5.2	Site Access- National Development Plan Road and Rail Network
Figure 5.12	Cork City Council Zoning Cork City Council Development Plan
Figure 6.15	Proposed Monitoring Locations
Figure 7.1.3	Residential dwellings within 500m proximity from the boundary of the facility
Figure 7.2	Designated Areas of Conservation
Figure 7.2.1	Habitat Map
Figure 7.6	Noise Monitoring Locations
Figure 7.8	Scenic Amenity Areas

Figure 7.8.1	Protected Structures and Landscape
Figure 7.8.2	Landscape Plan
Figure 7.8.3	*Zones of Visual Influence*
Figure 8.2	Cork City Council Primary and Secondary Archaeological Areas

Attachment B	Consultation Response Letters
Attachment C	Waste Acceptance Procedure
Attachment D	NPWS site synopsis for the Designated Sites
Attachment E	Photographic Log of Facility

Non Technical Summary

Introduction

This Non-Technical Summary is a concise summation of the primary environmental aspects as outlined in the main Environmental Impact Statement.

Country Clean Recycling Ireland Ltd. (CCR), received a Waste Management Permit (Ref: 02/07) from Cork City Council for its Waste Transfer and Recycling Facility located in Churchfield Industrial Estate, John F. Connolly Road, Co. Cork approximately 1.5 kilometers north of Cork City Centre.

As a result of the increase in activity at the facility CCR are in the process of preparing a Waste Licence application to the EPA to increase its processing operations to 100,000 tonnes per annum to ensure compliance with the Waste Management Act of 1996 and associated Waste Management Licensing Regulations.

The facility requires an Environmental Impact Statement under S.I. 93 of 1999 as the quantities of waste that will pass through the facility will increase circa 100,000 tonnes per annum and as a result the increases in the volume of waste and the associated traffic, and processing activities within the facility.

Schedule 5 of the Planning & Development Regulations, 2001 indicates when an EIS is required. In this regard Schedule 5 states that *"Other Projects: installations for the disposal of waste with an annual intake greater than 25,000 tonnes not included in Part I of the Schedule* require an EIS" *(Schedule 5 part 77 b).*

The relevant activities of the operation in the Third and Fourth Schedule of the Waste Management Act 1996, and as amended in the European Communities (Amendment of Waste Management Act 1996) Regulations 1998, S.I. 166 of 1998 for which the Waste Licence application is being made are listed below.

Principal Activity:
Third Schedule, Class 4, *Recycling or reclamation of other inorganic materials,* referred to in a preceding paragraph of this Schedule.

Third Schedule
Class 11 -Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
Class 12 - Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.
Class 13- Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

Fourth Schedule
Class 2- Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological processes).
Class 3- Recycling or reclamation of metals and metal compounds.
Class 4- Recycling or reclamation of other inorganic materials
Class 11- Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.
Class 12 - Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.
Class 13- Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

Waste Management Policy

National policy on waste management is guided by the Department of the Environment and Local Government's policy statement of September 1998, "Changing Our Ways" and the more recent statement "Delivering Change" (2002) in which the Government reaffirms its commitment to the EU hierarchy of waste management, which in order of preference is: -

- **Prevention**
- **Minimisation**
- **Reuse**
- **Recycling**
- **Energy Recovery**
- **Disposal**

2.0 SITE DESCRIPTION AND THE EXISTING ENVIRONMENT

2.1 Site Location

CCR operate a Waste Transfer and Recycling Station (National Grid Reference E66068, N73642) situated in Churchfield Industrial Estate, John F. Connolly Road, Co. Cork, and area which is zoned for light industry and related uses.

Access to the site can be gained via a network of third class routes which may be approached to the south via the N22 (Kerry to Cork) National Primary Route, and the East via the N27 (Cork to Limerick) National Primary Route. The predominant land use within the immediate vicinity of the site is industrial; however it is also influenced by residential developments and minor agricultural influences.

2.2 Description

The site covers an area of approximately 0.87 hectares which includes the Materials Recovery Building, offices, canteen, and storage building. The remainder is used for skip storage, vehicular movement and parking, and, for car parking. There are also bunded fuel storage facilities, a truck wash bay and a weighbridge within the premises.

It is proposed to demolish 1,336m^2 of the existing Materials Recovery Facility (MRF) building, and extend by 2980m^2.

Permission is sought to extend the site to include canteen, office, toilet facilities, and electrical control room, and a 62,000 litre underground diesel storage tank, widening of the existing site entrance, and construction of a boundary wall along the southern boundary and all other associated ancillary works.

The entire site at the facility is enclosed by fencing approximately 2 metres in height and includes one entrance off John F. Connolly Road for HGV and car access and one off the Industrial Estate for cars only (restricted height access). The site is bounded by industrial/commercial facilities, and greenfields. The facility is located in an industrial zoned area for *light industry and related uses.*

Further development of the site is likely to include upgrading the surface and foul water networks, and increasing the size of the materials recovery facility buildings to facilitate the increased processing requirements.

2.3 Human Beings

It is anticipated that by the end of 2008 the facility will have handled over 57,000 tonnes of waste in addition to waste transferred from clients facilities direct to landfill or recycling facilities. The facility currently operates from 07:00 to 7:00 Monday to Sunday inclusive. Waste is accepted at the facility from 07:30 to 19:30 Monday to Sunday inclusive, thereafter operations are restricted to processing and sorting of waste material. Any collection/deliveries may be required outside normal operational hours to

facilitate customer demand. These abnormal hours will be recorded.

The waste types accepted at the facility include Mixed Municipal Waste, Commercial Waste, Construction and Demolition Waste, Recyclable Materials. No liquid waste is handled, stored on-site or transferred through the facility. The waste quantities are expected to increase over the next couple of years to a maximum of 100,000 tonnes per annum.

The primary land use in the immediate vicinity of the site is industrial. Outside this area the land use is predominantly residential with influences of green area for grazing purposes.

Industries/activities in the area comprise to other waste processing facilities which include National Recycling, and Ashgrove waste transfer station hence the development is in keeping with similar industry in the area. Other industries present within the industrial estate include, catering, glass manufacturing and smaller commercial activities. There are no hospitals, hotels, or other such sensitive amenities in the immediate vicinity of the site.

There will be no alteration in land usage as the site will still be used as a Materials Recovery Facility with only a slight modification to the size of the site to accommodate the increase waste intake. As a result the existing land use will not change.

It is anticipated that there will be approximately 104 traffic movements per day. An increase of 22 HGV movements per day from current operation levels (82 HGV's). While this represents a significant increase as a result of its location within an industrial setting, serviced by a network or roadways, it should not have an additional impact on the local community.

The proposed development will have a positive impact upon Cork City and the greater Region by providing recycling services and ensuring that more waste will be diverted from landfill hence reducing the negative impact on the environment.

2.4 Noise

Noise is described as unwanted sound and, because of its subjective nature, the level of annoyance is difficult to measure. There are standards, which define levels of acceptability for various commercial and residential developments.

Acceptable noise levels, at Noise Sensitive Areas will be kept below 55 dB (A) at daytime and 45 dB(A) at night-time.

A comprehensive day and nighttime noise survey of the site was conducted to establish the ambient noise levels in the vicinity of the facility and to determine whether any tonal components existed that were audible at Noise Sensitive Locations (NSL).

The noise assessment also predicts noise levels at the NSL post construction and where relevant proposes mitigation measures.

The results of the survey indicate that CCR does not generate significant noise levels at NSL's. The main auditable sources at site consist of road noise from the adjacent local road, site traffic movements, and noise from site operations – unloading, loading, sorting, etc.

Current NSL's are compliant with EPA Guidelines. The modeling assessment determined that post construction one of the NSL 1 will be marginally above EPA guidelines for day time noise levels, however this is unlikely to result in a noise complaint.

In summary facility may be audible at times at NSL 1 and NSL 2, however, the CCR noise levels are unlikely to give rise to any disturbance to generate complaints or nuisance as the site is in an industrial estate setting.

2.5 Traffic

The site is mainly accessed via a network of third class routes which may be approached to the south via the N22 (Kerry to Cork) National Primary Route, and the East via the N27 (Cork to Limerick) National Primary Route.

The entrance to the facility park is gained from the John F. Connolly roadway within the industrial estate.

A desk based traffic impact assessment was conducted in order to assess the potential impacts of additional traffic movements generated during operation of the waste baling facility. The proposed increase in operations will initially result in an increase in the number of traffic from 82 movements per day to 104 movements per day (entering and leaving the site). Traffic impact assessment results indicate that the waste baling facility will not have a detrimental impact on the road network within the industrial estate. The site is finished with a hard standing area, which is sufficient to deal with the traffic volumes expected at the facility. The access road is of good quality.

It is anticipated that there will be approximately 104 traffic movements a day. An increase of 22 HGV movements per day from current operation levels which should not have an additional impact on the local community.

2.6 Air

The possible significant air emissions resulting from on-site activities include both odour and dust emissions.

At the facility the waste streams include a mixture of municipal, commercial, recyclable and construction and demolition material household waste. In general the waste is of a dry nature however putrescible waste may potentially generate odours.

As a result of good housekeeping practices the length of time this material remains onsite is limited, and potential odours are contained within the Materials Recovery Facility. Country Clean Recycling have installed an odour neutralising system to further reduce the impact any odours generated in the building may have on the surrounding environment. This system can be activated in the event when extra odour control is needed.

All dust emitted from the facility can be described as fugitive. The potential source of dust at the facility may arise in dry conditions due to dust deposition within the Waste Transfer Station as a result of processing activities, in addition to traffic movements within the site. To date there have been no complaints received relating to dust emissions from the site.

A number of mitigation measures will be employed on site to reduce, and manage dust and odour emissions from HGV's some of which include watering and cleaning of site roads during long dry weather conditions, utilisation of onsite truck washer, and development and implementation of a dust management programme incorporating the use of a bowser to suppress dust on all road surfaces as necessary.

The Environmental Protection Agency air quality index is used to express

complex air quality information in simple terms. Five bands are used in the Irish index which range from "*very good*" air quality to "*very poor*" air quality. The air quality near the Country Clean Recycling facility is classified as being of "*Very Good Quality*" in relation to the EU Air Framework Directive and EPA Air Quality Zones. The facility has the highest air quality listed in the index.

Four dust monitoring locations are proposed as part of the Waste Licence Application as detailed within the Environmental Impact Statement.

Dust and odour emissions from the site may be attributed to a combination of off-site as well as on-site activities. Future activities at the facility are likely to generate larger quantities of dust, however it is considered that the dust suppression measures coupled with the regular site inspections will ensure that the operations at the facility do not significantly impact the surrounding environment.

2.7 Geology and Hydrogeology

The site is located to the north side of Cork city. The underlying bedrock is characterised by Devonian Old Red Sandstones, which is the predominant bedrock type through Co Cork. The bedrock formation is known as the Gyleen Formation and is characterised by alternating mudstones and sandstones.

The Gyleen formation has been classed as a locally important aquifer where bedrock is moderately productive only in local zones (Ll). The interim vulnerability of this aquifer has been classed as extreme (E)

The operations at the facility are unlikely to have any impact on the hydrogeological regime as activities on-site are carried out on hard standing areas with the site. Any leachate generated as a result of waste sorting and processing operations is stored within an underground bunded tank which flows via a class 1 full retention oil interceptor prior to discharging to Cork City Councils foul pipeline which is located to the north of the site. None of the skips/ bins stored on site contain wastewater, thus preventing leachate being generated from these.

2.8 Surface Water

Currently all process water and truck wash water from the site is fed through a class 1 full retention Oil Interceptor and into Cork City Councils foul water sewer.

It is proposed to divert all rainfall runoff from the hard standing paved areas through the existing class 1 Oil interceptor and into Cork City Council's foul water system. The existing oil interceptor is sized to cope with surface water runoff from the hard standing areas of the facility

All roof runoff is directed to the Cork City Councils storm water system

There is one proposed water monitoring location from the site, which is the water discharge (SE1) from oil interceptor

All wastewater from the canteen and office areas discharge to a separate foul water sewer located to the south of the site.

2.9 Climate

There are no anticipated effects on climate as a result of the proposed development however climatological factors have a direct impact on possible water and air emissions from the site.

In order to determine the environmental effects of surface water emissions and air pollution dispersion

various climatic factors must be considered.

The nearest synoptic meteorological stations located near the facility is Cork Airport located approximately 20m northeast of the facility. Weather conditions from this facility are reasonably representative of conditions experienced in the area.

Met Eireann monthly and annual mean data over a 30-year return period (1961 to 1990) was reviewed as part of the assessment. The average annual rainfall over the period was 1194.4 mm. Annual daily mean temperatures are 9.4 °C, with a range of 5.0°C to 14.8 °C.

Construction activities of the proposed development would be expected to be the dominant source of greenhouse gas emissions as a result of onsite operations.

It is considered that the development will not have a significant impact on the climate of the area.

2.10 Cultural Heritage

A desk base archaeological assessment of the site and surrounding area was undertaken. A review of the Sites and Monuments Record of Co. Cork indicate that there are no sites of archaeological interest within the site.

Although there are no known sites within a 500m boundary of the site, as the surrounding area has recorded sites then there is a possibility that unknown sites remain to be discovered.

In the event of an unknown artefact being discovered it is recommended the developers will be prepared to take advice from the archaeological authorities at The Heritage Service, Department of the Environment, Heritage and Local Government and the National Museum of Ireland in the event of a discovery of any archaeological levels and/or artefacts.

In summary, there is no evidence to suggest that the facility is of any cultural or historical importance or infringes on any areas of heritage value.

2.11 Ecology

An ecological assessment of the facility was undertaken in May 2008 to assess the presence and potential for protected flora and fauna in the area. The assessment concluded that the operations on the site will have no significant impact on the ecology as there are no nationally important or endangered habitat types recorded at the site or on the lands adjacent to it.

The site itself and the industrial estate was dominated by artificial surfaces which are of little ecological interest.

The industrial estate is already subject to a high level of human disturbance, and the extension of the facility will not have a significant impact on the flora and fauna of the area.

2.12 Landscape

Country Clean Recycling is situated within the Chuchfield Industrial Estate, c. 1.5 km North West of Cork City. The area is surrounded in the industrial estate by various commercial and industrial buildings and also bounded by an area of grassland located to the north and east of the site.

The landscape assessment determined that there are no designated scenic routes within the immediate vicinity of the site, nor are there any built features / structures of landscape significance (e.g. castles, estates and gardens) in the vicinity of the site. As a result of the location of the facility within an area zoned for light industry and related uses it noted

that its visual intrusion is insignificant and is no worse than that caused by other facilities and industrial complexes present in the area.

In order to visually integrate the site within the industrial estate a landscape plan has been prepared to screen the appearance of the site from the southern entrance by planting native floral species.

3.2 Quantities and Nature of Waste

Approximately 50,000 tonnes of material was transferred through the facility in 2007. The waste types that are accepted at the facility include commercial/industrial waste, residual household waste and construction/demolition waste. No hazardous material is accepted at the facility. The facility proposes to accept 100,000 tonnes of material.

All waste received at the facility is weighed, and inspected prior to acceptance at the facility. Each load received at the facility is documented, and logged in both electronic and hard copy file. Once waste arrives at the facility, it is weighed, its details recorded and, upon approval, it is moved to the main building, the Materials Recovery Facility (MRF), for further processing.

Hazardous waste is not accepted at the site. Occasionally, however, hazardous waste such as fluorescent bulbs, batteries etc. can be inadvertently included in mixed waste loads from households or commercial facilities. In the event of this happening, the hazardous portion of the waste is segregated and stored in a designated quarantine area. These items are then collected and transported by a licensed contractor for recovery off-site. Each contractor provides a C1 Consignment Form which covers the movement of hazardous waste within the state.

3.3.2 Recyclable Waste

The facility processes a number of recyclable waste materials which includes: Glass, Cardboard, Metal, Timber, Rubble and Plastic. The recyclable fractions of material are processed by both manual and automatic processing lines.

Municipal waste which is received from both household and commercial inputs is visually inspected to remove any hazardous material is removed and placed in the quarantine area. The material is temporarily stored onsite prior to disposal to landfill.

Commercial waste is manually sorted onsite. The recyclable fractions are visually sorted and segregated for further processing within the facility. The remaining residual non recyclable plastic is mechanically sorted through a trommel and reprocessed through the construction and demolition waste stream. The residual waste is removed from the tromel to a conveyer belt to a baler.

Construction and demolition waste is initially inspected onsite to ensure there is no contamination or hazardous material present. The material is then mechanically sorted into different recycling components comprising paper, metal, wood, plastics, fines, and remaining rubble. The recyclable components of the material are extracted for storage and processing onsite.

Recyclable Material (mixed paper, cardboard, glass, metal, tetrapak) require very little sorting onsite. The material is initially inspected onsite to ensure there is no contamination or hazardous material present.

Any hazardous material is removed and placed in the quarantine area. The material is bulk stored in designated storage bays and subsequently

transported to a licensed material recovery facility.

The dry recyclables are then sorted and baled onsite. Other waste types (metal, glass, plasterboard) are placed in storage lots and transported off site to licenced recovery facilities.

Wood is stored onsite in a designated area and once a sufficient quantity is generated it is then shredded and transported to a licenced recovery facility.

1 Introduction

Country Clean Recycling Ltd. (CCR) currently operate a Materials Recovery Facility (MRF) located in Churchfield Industrial Estate, John F. Connolly Road, Co. Cork approximately 1.5 kilometers north of Cork City Centre as can be seen in Figure 1.1 of Attachment A.

The facility currently operates under a Waste Management Permit from Cork City Council (Ref: *02/07*) which enables the processing of mixed municipal waste, glass, paper, cardboard, metal, plastic, rubble, topsoil, and wood. The primary landuse within the area is industrial however there is residential development located to the north of the facility and some minor agricultural influences.

CCR currently receive circa 58,000 tonnes commercial and municipal wastes per annum and propose to increase this waste intake to 100,000 tonnes.

An Environmental Impact Statement (EIS) is required together with the Waste Licence Application for the proposed increase in tonnage and facility extension. It is in this context that this EIS has been prepared by OES Consulting for CCR.

1.1 Purpose of the Environmental Impact Statement

The Environmental Impact Assessment (EIA) is a statutory requirement which is required to predict the potential effects of the proposed development on the environment. The significance of potential negative impacts on the environment is assessed and mitigation measures are recommended to avoid, reduce, and eliminate this during the design, and operation phases. This document will be submitted to Cork City Council in support of a planning application for the development.

The EIS has been prepared having regard to all relevant National legislation and EU Directives and is based on the best available information at the time. The scope and content of this EIS takes into account the information requirements specified in the European Communities (Environmental Impact Assessment) Regulations 1989 to 2000. The document "Guidelines on the information to be contained in Environmental Impact Statements" as published by the Environmental Protection Agency (2002) was also consulted as part of the EIS.

1.2 Waste Licence Application

The existing facility is operated by CCR under a Waste Permit from Cork City Council (Ref: *02/07*).

In order to increase the amount of material processed at the facility an application for a Waste Licence will be made to the Environmental Protection Agency (EPA) in accordance with Section 42 of the Waste Management Act, 1996 as amended and the Waste Management (Licensing) Regulations, 2004. In accordance with these Regulations an EIS is required for submission to the EPA in part fulfillment of the Waste Licence Application.

1.3 Policy and Legislation

The EU Waste Framework Directive of 1975 and the EU Landfill Directive of 1999 and associated EU case law provide the basis for Ireland's current system of waste management.

1.3.1 Waste Management Policy

National policy on waste management is guided by the Department of the Environment and Local Government's policy statement of September 1998, "Changing Our Ways" and the more recent statement "Delivering Change" (2002) in which the Government reaffirms its commitment to the EU hierarchy of waste management, which in order of preference is: -

The DoELG policy statement highlights the need for major change in the planning, financing and operation of waste management by local authorities. It outlines a clear commitment to reduce dependency on landfill as a primary waste disposal route. It encourages the development of a smaller number of well-designed and managed landfills for the receipt of *residual* waste.

The policy document *Waste Management: Changing Our Ways* outlines ambitious targets for waste management as follows:

- A diversion of 50% of overall household waste away from landfill;
- A minimum 65% reduction in biodegradable wastes consigned to landfill;
- The development of waste recovery facilities employing environmentally beneficial technologies as an alternative to landfill, including the development of composting and other feasible biological treatment facilities capable of treating up to 300,000 tonnes of biodegradable waste per annum nationally;
- Recycling of 35% of municipal waste;
- Recycling at least 50% of construction and demolition (C & D) waste within a five year period, with a progressive increase to at least 85% over fifteen years;
- Rationalisation of municipal waste landfills, with progressive and sustained reductions in numbers, leading to an integrated network of some 20 state-of-the-art facilities incorporating energy recovery and high standards of environmental protection; and
- An 80% reduction in methane emissions from landfill, which will make a useful contribution to meeting Ireland's international obligations.

The proposed extension to the CCR waste transfer station will facilitate the collection, sorting and bulking of recyclable materials prior to transportation to appropriate recycling facilities. This development will contribute to a reduction in waste consigned to landfill and contribute to an increase in the recycling rates of municipal and industrial wastes within the South Western Region.

In 2002, the Department of the Environment, Heritage and Local Government launched a capital grants scheme which is targeted towards the provision by local authorities of waste recovery infrastructure, the need for which was identified in, or helps to achieve the objectives of, the local authority waste management plans. The types of infrastructure that are deemed eligible for support under the scheme include:

- Networks of "Bring Banks" for recyclable materials.
- Civic amenity sites for recyclables and bulky household wastes.
- Transfer stations facilitating recovery facilities.
- Materials recovery facilities (MRFs) for 'dry' recyclables.
- Biological treatment of "green" and organic household waste.
- The Department also makes grant assistance available to local authorities to offset the rising operational costs of operating existing recycling facilities.

1.3.2 EPA National Waste Database

The National Waste Database 2006 Report, published by the EPA in 2007 noted that as a result of significant problems with waste disposal *"urgent action is required in 2008 on diverting waste from landfill and on preventing further increases in gross waste generation."*

Commercial waste generation increased by 13% in 2006 to an "*all-time high*" of circa 17 million tonnes, 3 million tonnes of which was waste other than soil and stones.

Household waste increase by 14% (49,031 tonnes) in 2006; however the quantity of household waste going to landfill also increased, by 180,742 tonnes (15%), a reversal of the downward trend of recent years. This marks a significant challenge to achieve the national target of 50% diversion of household waste from landfill by 2013.

The report also notes a new policy intervention to divert waste, and biodegradable waste in particular, from landfill in the short term.

Environmental Policy No: 20 of Cork City Council's Development Plan (2004) aims to reduce waste through reuse and recycling through expanding "*re-cycling activities*" and promoting "*waste reduction*" and "*reducing the amount of waste being sent to landfill in accordance with the Waste Management Plan, 2001.*" The Development Plan notes the importance of locating Material Recovery Facilities within the City Centre.

Furthermore the Waste Management Plan for the Cork County Council 2004-2009 notes the presence of private waste facilities with the area and is "*firmly committed to goal increasing the city's recycling rates with respect to all waste fractions*". In particular emphasis will be paper/cardboard over the coming years as this is the *"largest single waste fraction generated in the city"* each year and it is both biodegradable and recyclable.

The National Strategy on Biodegradable Waste also sets down targets for individual waste streams. Each waste management plan is required to propose arrangements on how these targets are met:

- For paper and cardboard, the recycling targets for 2010 are set at 45% for households and 61% for commerce going up to 55% and 71% in 2013 and to 60% and 73% respectively in 2016. It is acknowledged that these levels will require significant investment in both kerbside collection arrangements, as well as "bring" facilities such as civic waste sites.
- A national home composting target of 20% of urban households and 55% of rural households has been set.

- All of these initiatives will leave a fraction of residual waste. This is estimated to increase by the Strategy Report from 308,904 tonnes to 499,762 tonnes per annum over the period 2010 to 2016. This material is required to be thermally treated and/or subjected to mechanical-biological treatment.

1.3.3 Need for the Development

The principal aim of the proposed development is to minimise the amount of biodegradable waste being consigned to landfill through recycling and recovery which specifically meet the needs identified in EU, national and regional polices on waste management. The government's "Delivering Change" document identifies a national infrastructural deficit of a network of centralised biological treatment facilities to deal with organic and green wastes.

In particular, the proposed development is very much in keeping with, and is to be purpose-built to meet the requirements for waste recovery, and recycling identified in the:

- Cork City Council's Development Plan (2004) Plan
- Waste Management Plan for the Cork County Council 2004-2009
- Waste Management - Changing Our Ways
- Preventing and Recycling Waste - Delivering Change
- The National Strategy on Biodegradable Waste
- Landfill Directive

The proposed development is consistent with the policy objectives of the Waste Management Plan for the Southwestern Region. It will provide infrastructure for treatment of biodegradable waste as well as recycling infrastructure for C&D waste thus reducing reliance on landfill capacity in the Region.

The proposed extension to the CCR facility at Chruchfield Industrial Estate will provide a recovery facility for recyclable materials which will be transported to appropriate recycling facilities.

2 Alternatives

2.1 The "Do Nothing" Alternative

As part of the project review stages, a number of alternatives were evaluated. The primary alternatives examined were the so-called "do nothing" alternatives and alternative site layouts for the site extension and the new access road.

In respect of the "do nothing" alternative, consideration must be given to a number of salient points as follows:

1. The site is currently in use as a Materials Recovery Facility and serves the Cork area which is the second largest city in Ireland, with a population of 123,062 persons.

2. There is a recognised demand for Materials Recovery Facilities.

3. There is a recognised benefit in facilitating the controlled development of Materials Recovery Facilities, with regular monitoring and assessment of emissions and discharges.

Accordingly, the do nothing alternative was not subjected to rigorous consideration.

2.2 Alternative Site Layouts

A number of alternative site and road layouts were given consideration prior to the finalisation of the layout. The final design has been selected which presents the greatest scope for development within the perimeter of the site. Specifically, the final layout in the context of the access road network and phased development will:

- Maximise available development space within the site
- Facilitate efficient access into the site from the access point off the John F. Connolly Industrial distributor road.
- Minimise the potential for adverse impacts on the water environment through attenuation and control of surface water flows from the site in a sustainable way.
- Provide natural screening through the implementation of a Landscape Plan.

2.3 Do-Nothing Alternative

The primary objective of the proposed facility is the recovery recyclable waste materials, thus minimising the volumes of recyclable waste disposed to landfill.

In the event that the facility is not extended at Churchfield Industrial Estate there will be a deficit in the waste management infrastructure in the Southwestern region for the recovery of recyclable materials. This is likely to result in delays in the implementation of national, regional and local waste policy objectives in relation to increasing the recovery of waste materials and minimising the volumes of treated waste disposed to residual landfill.

In effect, the do-nothing scenario will mean that:

- Recyclable waste will continue to be landfilled– this is contrary to national and local waste policy objectives.
- There will be a reduction in the provision for the recycling/recovery of source separated recyclable waste in the region.

This is in breach of:

- EU Landfill Directive (99/31/EC)
- Waste Management Plan for the Cork County Council 2004-2009
- Waste Management – Changing Our Ways
- Preventing and Recycling Waste – Delivering Change– a Policy Statement
- National Strategy on Biodegradable Waste

2.4 Other Alternatives

As the site is currently in use as a Materials Recovery Facility and as a result it was considered unnecessary to evaluate alternative development types.

2.5 Technical Difficulties

There were no technical difficulties encountered during the environmental assessment conducted at the proposed site.

3 Legislative Requirements

The EIS has been prepared having regard to all relevant legislation and EU Directives including the Council Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment and as amended, the EU Directive implemented in Ireland through S.I. No. 349 of 1989 entitled European Communities (Environmental Impact Assessment) Regulations, 1989 and as amended and the Planning & Development Act 2000, as amended by the Planning & Development Regulations, 2001 (S.I. 600 of 2001).

Schedule 5 of the Planning & Development Regulations, 2001 indicates when an EIS is required. In this regard Schedule 5 states that *"Other Projects: installations for the disposal of waste with an annual intake greater than 25,000 tonnes not included in Part I of the Schedule* require an EIS" *(Schedule 5 part 77 b).* Although this development is a combination of recovery and disposal the increase in tonnage is significant and therefore it was considered appropriate to prepare an EIS as the local authority and the EPA would consider the development would be likely to have significant effects on the environment.

Moreover, Section 13 of the Waste Management (Licensing) Regulations, 2004 requires waste licence applications in respect of waste recovery or waste disposal activities specified under Article 93 of the Planning and Development Regulations be accompanied by an EIS, thereby also subjecting the proposed development to an EIS.

4 Structure of the Environmental Impact Assessment

4.1 The Environmental Impact Statement

This Environmental Impact Statement has been prepared in accordance with the requirements of the EU Directive and the EC (Environmental Impact Assessment Regulations 1989-1999 and Environmental Protection Agency documents on 'Advice notes on current practice in the preparation of Environmental Impact Statements' (1995) and 'Guidelines on the information to be contained in Environmental Impact Statements' (2002). In addition, a number of other information sources were used in the preparation of the EIS, including:

- Cork County Council Development Plan, 2004-2009
- Cork City Council Development Plan 2004
- National Spatial Strategy 2002-2020
- Geology in Environmental Impact Statements- A Guide. Institute of Geologists of Ireland (September 2002)
- Advice Notes On current practice In Preparation of Environmental Impact Statements. Environmental Protection Agency (2003)
- Guidelines on the Information to be contained in the Environmental Impact Statements. Environmental Protection Agency (March 2002)
- Groundwater Protection Schemes. Department of Environmental and Local Government, Environmental Protection Agency and Geological Survey of Ireland (1999).

The structure of the EIS follows broadly the sequence of the EC (Environmental Impact Assessment) Regulations, 1989 to 1999 (as amended) and is divided into a number of sections which provide:

- A non-technical summary
- A description of the proposed development
- A description of the baseline-receiving environment
- An evaluation of the potential impacts of the development on the environment and a description of the preventative and mitigatory measures, which eliminate or reduce those impacts

Where relevant, appropriate amelioration measures to eliminate or reduce the potential for adverse impacts associated with the development will be detailed.

In the description of the impacts of the development, the following attributes of the receiving environment are described:

- Human Beings
- Flora and Fauna
- Soils and Geology
- Water
- Air and traffic
- Climate
- Landscape
- Cultural Heritage
- Use of Natural Resources
- The interaction of the above factors

The scoping of aspects of the environment will be limited to those in which the effects of the development thereon satisfy the two statutory criteria - that the effects are likely and significant.

4.2 Scoping of the Environmental Impact Assessment

The key attributes of the development identified during the scoping phase of the assessment as requiring detailed attention were:

- Traffic
- Dust
- Noise

4.2.1 Consultation

During the preparation of this Environmental Impact Statement, the following organisations were consulted:

- An Taisce
- BirdWatch Ireland
- Cork City Council
- Geological Survey of Ireland
- National Parks & Wildlife Service
- Environment Heritage and Local Government (DoEHLG)
- South Western Fisheries Board
- Southern Health Board,
- Health and Safety Authority,
- Teagasc

Copies of correspondence received are included as Attachment B and were considered as part of the Environmental Impact Assessment.

In accordance with Section 18(1) of the Waste Management Licensing Regulations, 2004 (S.I. No. 395 of 1997) the Environmental Protection Agency are required to submit copies of the EIS to a number of certain public authorities. As a result, any persons wishing to make a written submission regarding the Waste Licence Application should write to the following address within a period of one month following the availability of documents for inspection:

The Environmental Protection Agency
P.O. Box 3000,
Johnstown Castle Estate,
Co. Wexford

The Waste Management (Licensing) Regulations 2004 require that a notice with respect to the EIS be published in local national newspapers and also that a notice be erected on site. The EIS and Waste Licence Application will also be available for inspection at the EPA.

4.2.2 Difficulties in Compiling Specified Information

No particular difficulties were encountered in compiling the information required for this Environmental Impact Statement.

4.2.3 Terminology

The following abbreviations are used throughout this document:

a	annum
AADT	Annual Average Daily Traffic
AFF	An Foras Forbartha
ASI	Area of Scientific Interest
BOD	Biochemical Oxygen Demand
BLS	Below Surface Level
d	day
dB(A)	A-weighted decibels
dB, L_{Aeq}	A-weighted equivalent continuous level
EC	European Community
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
EU	European Union
h	hour
ha	hectare
HGV	Heavy Goods Vehicle
kg	kilogram
km	kilometre
kV	kilovolt
kW	kilowatts
l	litre
MRF	Materials Recovery Facility
m	metre
m^2	square metre
m^3	cubic metre
mg	milligram
min	minute
NHA	Natural Heritage Area (prefix 'p' indicates proposed)
Nm^3	normal cubic metre (i.e. volume occupied by a cubic meter of gas at standard reference conditions STP)
NO_x	nitrogen oxides
OD	ordnance datum
p.a.	per annum
PCU	Passenger Car Unit
PE	Population Equivalent
pm	particulate matter
ppm	parts per million
s	second
SAC	Special Area of Conservation (under EU Habitats Directive)
S.I.	Statutory Instrument
SPA	Special Protection Area (for the Conservation of Wildbirds)
ss	suspended solid
t	tonne
WHO	World Health Organisation
wk	week
µg	microgram

Standards are referenced throughout the document where relevant. Irish Standards are quoted where available, except in situations where an equivalent

British Standard, Code of Practice or other International Standard is more up to date or stringent.

5 Proposed Development

The transfer station currently accepts circa 50,000 tonnes per annum of household, commercial, Construction and Demolition (C&D) wastes.

It is intended that the proposed facility will process 100,000 tonnes per annum. This will include an extension of the existing waste transfer station building for the temporary storage and processing of waste material. Table 5.1 provides details of the proposed waste types and quantities required as part of the application.

Table 5.1 Description of Waste Types and Recovery

	Maximum Tonnes Per Annum
Waste Description	**26,000**
Dry recyclable waste	**13,000**
Construction and Demolition Waste	**26,000**
Mixed Municipal Waste	**35,000**
Proposed Annual Permitted Waste Intake	**100,000**

The new building will be altered to facilitate delivery and loading of waste to and from the building. As part of the planning application it is proposed to extend the existing entrance point located to the south east of the site to ease access and egress for waste vehicles.

It is proposed to to demolish 1,336m^2 of the existing Materials Recovery Facility (MRF) building, and extend by 2980m^2 . The proposed addition of a 2980 m^2 will not exceed the existing MRF structure's height. Additional alterations to the facility will comprise:

- Provision of canteen, office, toilet facilities, and electrical control room;
- Removal of temporary portacabin containers at the south of the site.
- Installation of an underground bunded diesel tank with a 62,000 Litre, capacity.
- Widening of the existing site entrance.
- Construction of a retention wall along the southern boundary.

Drawings indicating the proposed location and layout of the above have been submitted as part of the planning application.

5.1 Site Description

5.2 Site Location

The MRF is located in Churchfield Industrial Estate approximately 1.5 kilometers north of Cork City Centre as can be seen in Figure 5.2 of Attachment A.

5.3 The site

The total area of the site is circa 0.87ha. The site comprises the Materials Recovery Facility (MRF), office buildings, and recyclable storage and processing areas, and the remainder is utilised for the storage of skips, car

parking, and to facilitate traffic movement in and out of the facility. The facility is zoned within an area designated for light industry in accordance with Cork City Council Development Plan. The site is surrounded by green space to the north and east, by commercial/ industrial facilities to the west and by John F. Connolly Road to the south in addition to commercial/ industrial facilities. Within the site there are bunded fuel storage areas present within the site in addition to a weighbridge, and washing area. The site is enclosed by fencing approx. 2 meters in height, which also incorporates the site entrance located to the southeast of the site.

5.4 Existing Use

The site is actively used as a MRF which has been operational for over circa 5 years. The operation at the facility includes mechanical and physical processing of waste material which includes activities such as sorting, baling and temporary storage of waste material.

The facility currently processes approximately 50,000 tonnes of waste material per annum under a Waste Management Permit from Cork City Council (Ref: *02/07*). As a result of the increasing demand and unexpected growth in the operations of the facility the company has decided to apply to the Environmental Protection Agency for Waste Licence to ensure compliance with the Waste Management Act of 1996 and associated Waste Management Licensing Regulations.

5.5 Adjoining Landuses

Land use within the vicinity of the site is dominated by industrial facilities with neighbouring residential areas located to the north and east.

5.6 Site Access

Access to the site can be gained through a network of third class routes which may be from the south via the N22 National Primary Route, and form the East via the N27 National Primary Route. All vehicles deliver and collect waste through this access point over the weighbridge. The infrastructural network can be seen in Figures 1.1 and 5.6 of Attachment A.

5.7 Hardstanding Areas

The majority of the site consists of concrete hard standing area which covers circa 0.87 hectares. It is planned to surface the reminder of the site which currently comprises soft unpaved ground as part of the planning process. The surface water catchment area is contained within this area and rain water drains to the areas of soft ground before discharging to ground. It is proposed to connect the surface water from the site to Cork City Council's drainage network located to the north of the facility. All waste processing and sorting activates are undertaken in the Materials Recovery Facility (MRF), which is surfaced by hard standing concrete. Any leachate produced as a result of processing the material is collected in an underground sump which subsequently discharges to Cork City Council foul network via Class I Full retention oil interceptor.

5.8 Topography

The site is located north of Cork City on a prominent plateau which rises to circa 130m Ordinance Datum (m OD). The northern hilly areas of Cork City are seen in contrast to the flatter low lying areas located south of the city centre.

The landscape character of the surrounding area is dominated by industry, with residential areas, and grassland to the north and northwest of the site.

5.9 Underlying Geology

The site is located at the north side of Cork City. The underlying bedrock is characterised by Devonian Old Red Sandstones. The bedrock formation is known as the Gyleen Formation and is characterised by alternating mudstones and sandstones.

5.10 Site Services

The site is currently serviced by public mains water and a Cork City Council foul sewer network

Surface water runoff from the paved areas, currently, is collected from the southern areas of the site (including the existing wheel wash) and is passed through the oil water interceptor prior to discharge into Cork City Councils foul water network. It is proposed to collect all surface water from the site and pass it through the oil water interceptor and into the Cork City council's foul sewer network to the north of the site.

The site is served by a 10 Kilovolt (kV) medium voltage 3 phase distribution system power line.

5.11 Surface Water Drainage

All surface water runoff from the southern section of the site including the wheel wash is collected through the oil water interceptor prior to discharge to the Cork City Council's foul water sewer. It is proposed to have all hard standing area except for the roof water runoff being discharged through the Class I full retention oil interceptor.

It is proposed to collect roof runoff from the site in a storm water attenuation tank prior to connection to the storm water system.

5.12 Applications and Approvals Process

The site is located within an area designated for light industry as can be seen in Figure 5.12 of Attachment A. Section 10.4 of Cork City Council Development Plan notes that the objective of light industry zoning is to "protect the industrial nature of the development and provide for light industry where the primary activity is the manufacturing of a physical product." The acceptable light industry include "warehousing and distribution; wholesaling; trade showrooms; retail showrooms (where ancillary to manufacturing, fitting and trade); and incubator units".

5.13 Nature and Quantity of Waste

The facility is permitted to process non-hazardous material. The quantities and types of non-hazardous waste processed for 2008 are outlined in Table 5.13. CCR currently receives approximately 58,000 thousand tonnes of commercial and municipal waste per annum as outlined in Table 5.13., and propose to increase their waste intake to 100,000 tonnes per annum.

Table 5.13. Permitted Waste Types processed in 2008 under current Waste Management Permit

Waste Material	EWC Code	Quantity Processed in 2008 (Tonnes)
Mechanically Treated Municipal Waste	19 12 12	22,449.80
Dry Recycables	15 01 06	7,315.06
Bulky Waste	19 12 12	424.32
Aluminium	17 04 02	18.66
Batteries	20 01 33	9.66
Cardboard	15 01 01	1,317.92
Copper	19 12 03	0.70
Gas Cylinders	16 05 05	3.91
Mixed Glass (Packaging)	19 12 05	145.88
Sheet Glass (Non-Packaging)	19 12 05	88.04
Glass End of Life Vehicles - (EWC Code 16 01 20)	19 12 05	86.38
Mechanically Treated Waste	19 12 12	3,897.38
Mixed Metal	19 12 02	1,021.73
Lead	19 12 03	0.88
Plastic	19 12 04	53.94
Minerals (for example sand, stones)	19 12 09	19,035.55
Minerals (for example sand, stones), [Crushed Masanory]	19 12 09	1,234.45
Waste Tyres	16 01 03	10.50
Wire Cable	17 04 11	32.22
Woodchips	19 12 07	1,040.54
Electrical and electronic equipment	20 01 36	0.56
Textiles	19 12 08	2.20

The facility currently accepts municipal waste arising in County Cork, from domestic and commercial sectors. The facility also provides it own collection service for the customers. It is proposed to increase the annual waste intake to 100,000 the breakdown of which is shown below in Table 5.13.1.

Table 5.13.1 Proposed Waste Types and Quantities

Waste Description	Maximum Tonnes Per Annum
Household and Commercial Waste	**26,000**
Dry recyclable waste	**13,000**

Waste Description	Maximum Tonnes Per Annum
Construction and Demolition Waste	26,000
Mixed Municipal Waste	35,000
Proposed Annual Permitted Waste Intake	100,000

The proposed extension to the Materials Recovery Facility will require planning permission from Cork City Council. In order to facilitate the planning process CCR proposes that a tonnage of 100,000 be licensed by the EPA subject to the agreed infrastructure being implemented on-site.

5.14 Classes of Activities as specified in the Third and Fourth Schedules of the Act

The facility is currently operating under a Waste Permit as issued by Cork City Council (ref: 02/07).The facility accepts material in accordance with Classes 11, 12, and 13 of the Third Schedule of the Waste Management Acts. These aforementioned activities relate to the blending, repackaging, and storage activities prior to submission for disposal/recovery. The principal activities undertaken at the facility in accordance with the Fourth Schedule of the Waste Management Acts is Class 4 "Recycling or reclamation of other inorganic materials".

The Classes of Waste Disposal and Recovery Activities applied for as per the Third and Fourth Schedules of the Waste Management Act, 1996 to 2003 are as follows:

Third Schedule

Class 11 -Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
Class 12 - Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.
Class 13- Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

Fourth Schedule

Class 2- Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological processes).
Class 3- Recycling or reclamation of metals and metal compounds.
Class 4- Recycling or reclamation of other inorganic materials
Class 11- Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.
Class 12 - Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.
Class 13- Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

5.15 Operating Hours

The facility proposed to operate seven days a week, 24 hours a day as follows:

Waste Acceptance*	Hours of Operation**
6.00 -19.30	7.00-7.00***

(The hours during which the facility is authorised to accept waste.)
** (The hours during which the facility is authorised to be operational).
***Please note that after 20.00 hours all mechanical sorting of waste ceases, and operations will be restricted to cleaning of the site.

6 Waste Acceptance

Once waste arrives at the facility, it is weighed, its details recorded and, upon approval, it is moved to the main building, the Materials Recovery Facility (MRF), for further processing.

Incoming waste material is weighed on the weighbridge near the site entrance and the following information is recorded for site records:

- Description of the waste including waste types, composition, form and relevant EWC Code
- The origin of the waste including customer details
- The weight of the waste load.

Waste from each individual customer is categorised as either municipal or industrial waste and an appropriate European Waste Catalogue Code (EWC) assigned to the waste.

Visual inspections and documentation inspections are undertaken on each load received at the facility. Any waste which does not conform to that specified within the Waste Permit is held onsite and Cork City Council are subsequently contacted in order to assist with agreeing an appropriate disposal route. The waste process is illustrated in Table 6.1.

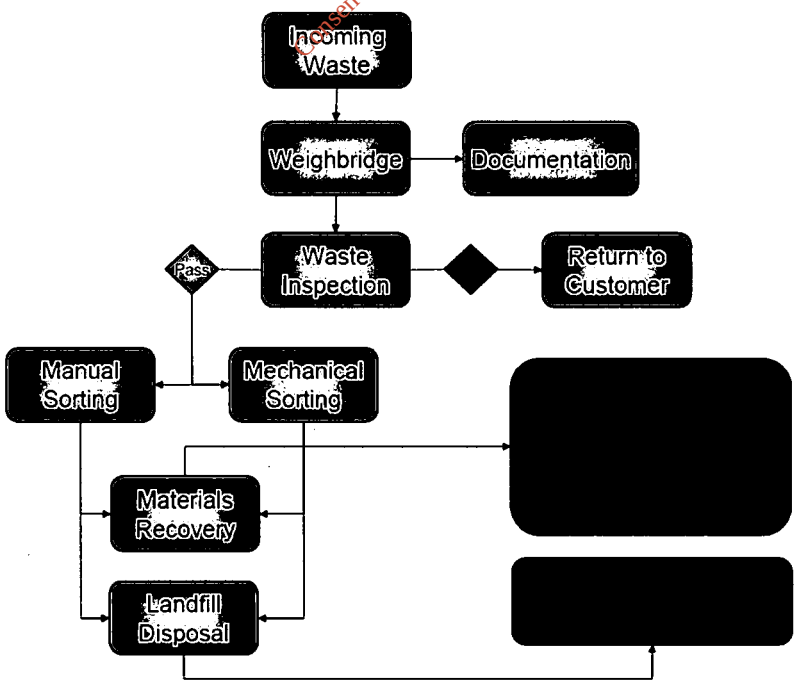


Figure 6.1 Basic Waste Stream Process

6.1 Hazardous Waste

Hazardous waste is not accepted at the site. Occasionally, however, hazardous waste such as fluorescent bulbs, batteries etc. can be inadvertently included in mixed waste loads from households or commercial facilities. In the event of this occurring, the hazardous portion of the waste is segregated and stored in a designated quarantine area. These items are then collected and transported by a licensed contractor for recovery off-site. Each contractor provides a C1 Consignment Form which covers the movement of hazardous waste within the state.

All waste handled at the facility is undertaken in accordance with the waste handling procedure. The waste acceptance procedure is appended as Attachment C of the EIS.

6.2 Municipal Waste

Municipal waste which is received from both household and commercial inputs is tipped into the municipal waste storage bay within the building and the material is visually inspected to ensure there is no contamination or hazardous material present. The material is transported off site to licensed disposal facilities within a turn around time of 24 hours.

6.3 Mixed Dry Recyclable Material

Recyclable Material (mixed paper, cardboard, glass, metal, tetrapak) require very little sorting onsite. They are initial inspected to ensure there is no contamination or hazardous material present. Any hazardous material is removed and placed in the quarantine area. The material is bulk stored in designated storage bays and subsequently transported to a licensed material recovery facility.

6.4 Wood

Wood is stored onsite in a designated area and once a sufficient quantity is generated, it is then shredded and transported to a licensed recovery facility.

6.5 Glass

Mixed packaging glass is collected from commercial and household premises, it is stored in designated storage bays according to glass type i.e. mixed packaging glass (EWC code 15 01 07), plate glass vehicle glass (EWC Code 16 01 20) or plate glass (EWC code 20 02 01) and once a sufficient quantity is generated it is then transported to a licensed recovery facility.

6.6 Construction Demolition and Commercial Waste

This generally comprises rubble, recyclable material and bulky waste. Commercial and C&D waste is initially inspected onsite to ensure there is no contamination or hazardous material present. Any hazardous material is removed and placed in the quarantine area. The waste is initially manually sorted and then is mechanically processed. This is outlined in the process description and flow diagrams as can be see in Table 6.6 and Figure 6.6 respectively.

The processing of mixed municipal waste produces an effluent. The existing process shed drains to a holding tank (Need dimensions of tank) and subsequently flows through an oil interceptor and to sewer. Storage bays are located within the facility which store the relevant material until sufficient quantities are generated to be transported to a material recovery facility.

All waste leaving the facility is weighed and its destination recorded. An illustration of the waste processing for the facility is illustrated in Table 6.6.

Table 6.6 Description of Waste Process at Country Clean Recycling Ltd.

Waste Line	Process	Description	Machine used	Waste Out Put
A	**WASTE LINE A**			
A.1	Waste on Site	Skip Waste On Site (I.e. Mixed Commercial Waste Mixed C&D)	1) Skip Trucks	
A.2	Scalping	Waste is Mechanically and Manually separated, to removed bulky material that may block line, timber pallets, mattresses	2) Manual Handling 3) Excavator 4) Skid Steer	· Bulky Mixed Waste e.g. Mattresses, Large Timber · Timber Pallets · Oversized Metal · Clothes · Fugitive material/Hazardous waste, WEEE goods.
A.3	Feeding Hopper	Scalped Waste is Feed into Hopper by Excavator or loader.	1) Loader or 2) Excavator	N/A
A.4	Inclined Conveyor Belt	Waste Passing through an inclined belt that travels fast to separate out waste leaving hopper.	Conveyor Belt	N/A
A.5	102mm Finger Screening	Waste passes into 102mm Finger Screen. Two outputs **1).** Waste over 102mm passed over screen onto picking line via conveyor **2).** Waste material below 102mm passing down into hopper under screen.	Finger Screen	N/A

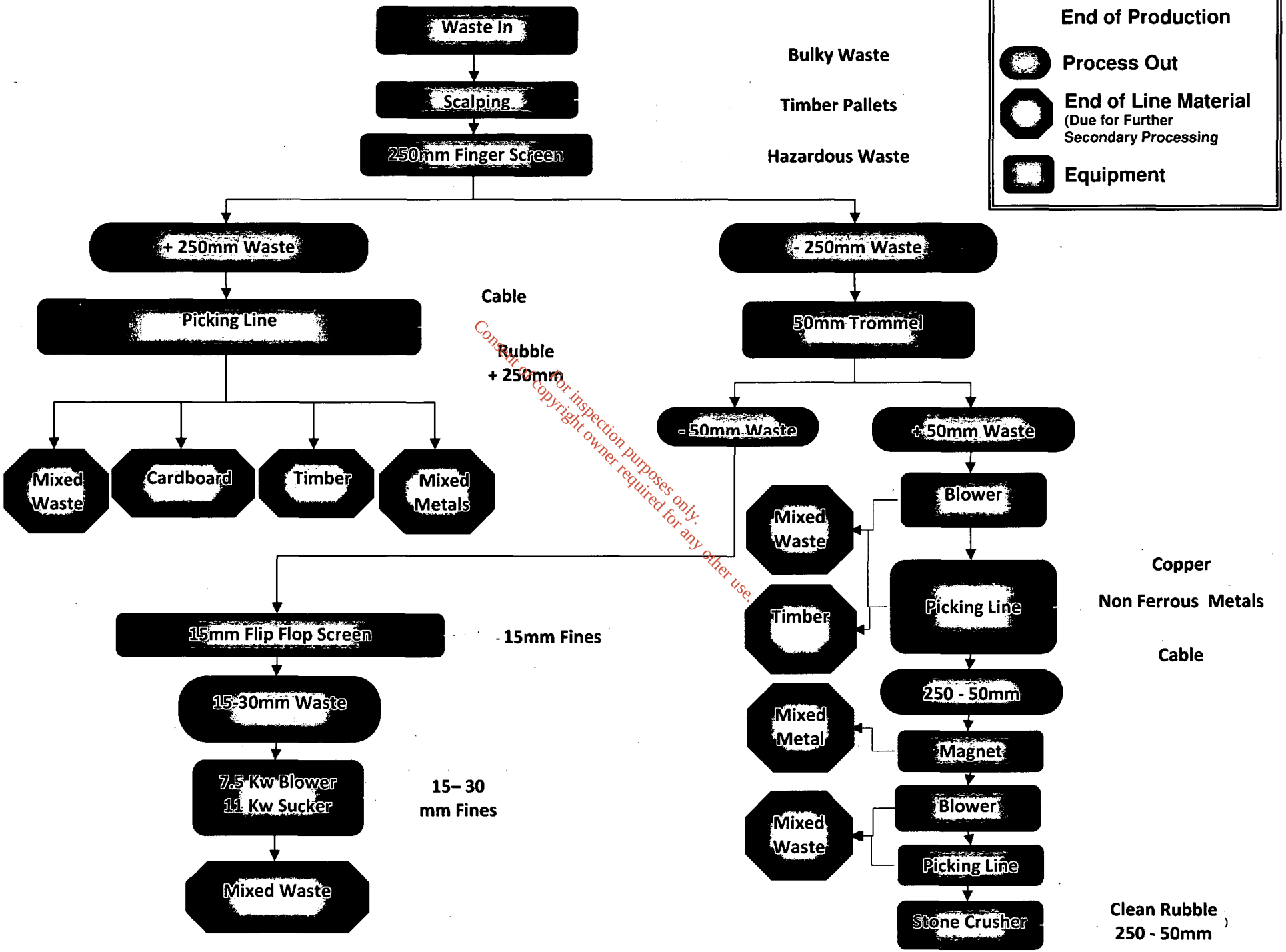
Waste Line	Process	Description	Machine used	Waste Out Put
B	**Waste Line B (Post Finger Screen Waste >250mm)**			
B.1	Picking Line	Via Conveyor material passes onto picking line, where waste material is picked off and placed in to sorting bays.	5 M Picking Line	· Timber · Mixed Metal · Cardboard · Rubble (+250mm) · Cable · Copper · Mixed Waste (Unsuitable material for recycling 70% Plastic) **
C	**Waste Line C. (Post Finger Screen Waste <250mm)**			
C.1	Less than 250mm Waste Passes into Hopper	Waste from hopper moves via conveyor into Trommel	Conveyor belts	N/A
C.2	Screening 50mm	Waste through 5m Trommel to separate waste into + -50mm waste stream	50mm Trommel	N/A
D	**Waste Line D (Post Trommel Waste > 50mm)**			
D.1	10m Picking Line	+ 50mm waste from Trommel passes onto 10m long picking line. Waste Separated	10 M Picking Line	· Mixed Metals · Cable · Copper · Timber · Mixed Waste (Unsuitable material for recycling ~70% Plastics)**
D.2	Metal Removal	Magnet at the end of 10m picking line removes ferrous metals	Over band Magnet	· Mixed Ferrous Metals
D.3	Blower	Blower at the end of the picking line removes any light material mainly plastics, paper & Aero board	Blower	· Mixed Waste**

Waste Line	Process	Description	Machine used	Waste Out Put
D.4	Pre Stone Crusher Picking Line	Remaining Masonry and rubble waste passes along conveyor through a 1m picking line to remove any remaining non rubble material	1 m picking line	· Mixed Waste**
D.5	Masonry Crusher	Rubble passes through stone crusher to crush rubble	Masonry Jaw Crusher	· Crushed Masonry/Rubble (Between 50mm to 102 mm)
E	**Waste Line E (Post Trommel Waste < 50mm)**			
E.1	Feeder Conveyor	- 50mm waste from Trommel falls onto Flip Flop feeder conveyor	Flip Flop Feeder Conveyor	N/A
E.2	Ferrous Metal Removal	As material is conveyed on the Flip Flop feeder conveyor it passes beneath an overband magnet, that remove any ferrous metals into a designated bin.	Over band Magnet	Mixed Ferrous metals
E.3	Flip Flop	The Flip Flop contains a 15mm screen for screening fines. The fines (<15mm) pass onto a conveyor	Flip Flop	N/A
F	**Waste Line F (Post Flip Flop Waste < 15mm)**			
F.1	Fines to Storage Bay	The <15mm fines are deposited beneath the Flip Flop onto the Fines Collection Conveyor, (which is reversible), Fines is sorted into a designated storage bay.	Fines Collection Conveyor	<15mm Fines
G	**Waste Line G (Post Flip Flop Waste > 15mm)**			

Waste Line	Process	Description	Machine used	Waste Out Put
G.1	Sucker & Blower	The > 15mm material from the Flip Flop is conveyed from the Flip Flop on the Flip Flop discharge Conveyor, A 7.5Kw blower blows light material up towards the 11Kw blower/sucker which sucks the light material and deposited them in a designated storage bay for stock piling. The remaining material Rubble (15mm-50mm) is deposited in a designated storage bay	7.5Kw Blower 11Kw Blower/sucker	· 15mm-50mm rubble · Mixed Waste**

** This Waste is Not suitable for recycling and is passed through a shredder and bales and send for disposal

Country Clean Recycling Mixed Skips Primary Waste Process



Secondary Waste Treatment after Initial Waste Process

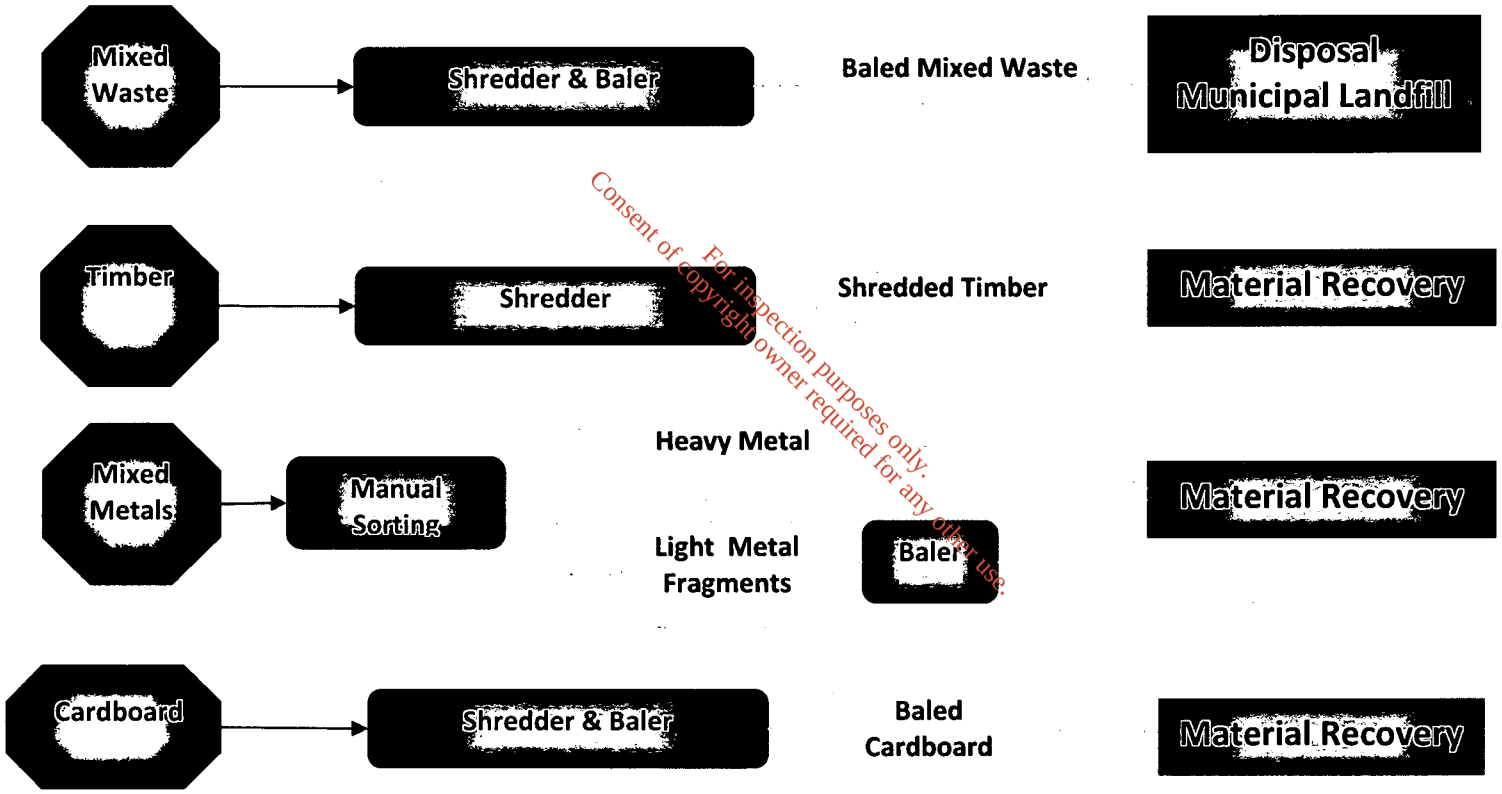


Figure 6.6 Waste Processing Description

6.7 Management Structure

CCR are Munster's leading independent waste solution specialists, offering a wide range of waste management and recycling services to the household and commercial sector in Munster.

The company employs circa 25 employees at the waste management facility located in Churchfield Industrial Estate which has been operational since June of 2002.

The company has operated a waste collection and recycling business since 1990 and have demonstrated their technical capability and site management through their involvement in the waste collection sector, installation of plant processing technology, which is verified by their client base whom they have served and has continued to grow over the years.

The management team comprises competent experienced personnel who have spent many years in the waste sector. The Managing Director will be responsible for environmental management at the site including compliance with the Waste Licence. The Yard Manager will assist the Managing Director by completing the FAS course for the waste facility management in February 2009. The Environmental Health and Safety Officer will ensure the effective implementation of the Environmental Health and Safety of the site. The management structure of the site is outline in Table 6.7.

Table 6.7 Organisation and Management Structure

Name	Position	Duties and Responsibilities	Experience /Qualifications
David O' Regan	Company Director	▪ Overall Management of the Site. ▪ Quality Control	Management Experience 18 Years.
Mary O' Regan	Company Director	▪ Site Management. ▪ Ensuring site procedures are adhered to by all	Management Experience 18 Years.
Flor Crowley	Environmental Health and Safety Officer	▪ Management and Implementation of Environmental Health and Safety initiatives. ▪ EHS training ▪ Reviewing and updating EHS Procedures.	BSc. Environmental Management 5 years management experience.
Tim O'Regan	Yard Manager	▪ Coordination of waste processing operations ▪ Coordination of maintenance and upkeep of yard areas.	6 Years Management experience.

6.8 Nuisance Control

During the routine inspections for litter, the access road and the facility will be inspected for mud deposition, especially during periods of wet weather. Any mud will be removed through the washing of the area.

All movements on-and off the site will be controlled by the facility manager/weighbridge operator.

6.9 Dust Control

All processes will take place within the confines of the Materials Recovery Buildings to minimise the potential for dust emissions.

6.10 Odour

All material being transported to the site will be enclosed IN covered vehicles and the unloading of this material will be carried out within the waste reception hall which will be operated under negative pressure.

The layout of the site has been constructed in order to maintain outdoor operation as far as possible from sensitive receptors. Residence time for biodegradable waste is kept to a minimum.

All work surfaces are kept clean and regularly maintained to prevent the accumulation of anaerobic bacteria. Odour abatement spray is present withIN the Materials Recover Facility in the even of an odour issue.

6.11 Emissions to Soil and Groundwater

Impermeable concrete floors are present within the building and the outside of the site with the exception of a small area to the north of the site which will be paved as part of the planning application. These measures will prevent emissions to soil and groundwater. All floors within the Material Recovery Facility drain to a sump which will drain to a Class I oil interceptor and subsequently to Cork City Fowl water network.

6.12 Vermin Control

Vermin and insects can potentially be a nuisance at waste management facilities. Measures to prevent vermin nuisance are in place at CCR. These measures include:

- All waste sorting and temporary storage will be undertaken within the Material Recovery Facility.
- All waste operations shall be undertaken within the waste processing building, which shall have the shutters closed at all times, except when vehicles are unloading.
- Hygiene procedures are in place to require the regular cleaning of all plant and waste sorting storage areas.
- A Vermin management programme is in place at the facility; all operations will be carried out within dedicated MRF.

6.13 Litter

Litter is controlled at the facility as all waste being delivered to the site is processed within the dedicated Materials Recovery Building. As a precaution regular litter patrols of the site perimeter and access road are undertaken. Where litter is noted around the site it is immediately collected and returned to the site.

6.14 Fire Control

In general, fires will be prevented by operating best practice including:

- Inspection of loads at the weighbridge
- Control of loads to ensure no burning or smoldering loads enter the facility
- Designation of smoking/non smoking areas
- Security.

6.15 Environmental Monitoring Programme

CCR intends to implement a comprehensive environmental monitoring programme on site to monitor and control all elements of the process and emissions. This programme will be dependent on the conditions of the Waste Licence granted by the EPA.

The monitoring programme will monitor, at a minimum:

- Emissions to surface water
- Noise
- Odour
- Dust deposition

Figure 6.15 outlines the proposed monitoring locations for the CCR site (subject to agreement with the Agency).

All environmental monitoring for facility will be undertaken in accordance with the Waste Licence which will be issued by the Environmental Protection Agency (EPA).

Emission Limit Values (ELV) will be set by the EPA for air, noise, and water monitoring points which will be monitored, and breaches of these ELVs will be considered non-compliance with the Waste Licence.

CCR personnel and/or an external consultancy will carry out the sampling and monitoring programme. The Environmental Manager will be responsible for the implementation of the monitoring programme. Samples are collected and transported under chain-of-custody to an approved laboratory. Results will be tabulated in standard forms for submission to the Agency as part of the on going monitoring requirement.

6.16 Parameters/Media to be monitored

Table 6.16 summaries the proposed monitoring locations and frequency for the different media to be monitored.

Table 6.16 Proposed Monitoring Locations and Frequencies

Parameter	Location	Monitoring Frequency
Dust deposition	D1 (E166066 N73608)	Three times annually
	D2 (E166125 N73615)	Three times annually
	D3 (E166167 N73598)	Three times annually
	D4 (E166135 N73536)	Three times annually
Noise	N1 (E166081 N73528)	Bi- Annually
	N2 (E166064 N73629)	Bi- Annually
	N3 (E166161 N73630)	Bi- Annually
	N4 (E166155 N73551)	Bi- Annually
	N5 (E166154 N73580)	Bi- Annually
	NSL1 (E166191 N73590)	Bi- Annually
	NSL2 (E166117 N73645)	Bi- Annually
Odour	O1 (E166066 N73608)	Weekly
	O2 (E166125 N73615)	Annually
	O3 (E166167 N73598)	Annually
	O4 (E166135 N73536)	Annually
Surface Effluent	SE1 (E166135 N73604)	Quarterly

6.17 Decommissioning and Aftercare

CCR have set out plans in the unlikely event of facility shut down, or a planned cessation for a period of greater than six months of all or part of the site involved in the Waste licensed activity.

Should either of the above conditions occur CCR will decommission, render safe or remove for disposal/recovery, all materials, waste, ground, plant and equipment that may result in environmental pollution, in accordance with the existing Decommissioning Plan for the facility. This plan will be reviewed by CCR in the event of any material change to the operation or in the volume of waste to be accepted at the facility.

Following implementation of the plan, CCR will produce a validation report that demonstrates its successful implementation. This report will confirm that there is no continuing risk of environmental pollution to the environment from the site.

This report shall address: -

1 .Disposal of raw materials,
2. Disposal of wastes,
3. Decommissioning of plant and equipment,
4. Disposal of obsolete equipment,
5. Results of monitoring and testing,
6 .The need for ongoing monitoring or investigations.

This report will be submitted to the Agency within three months of execution of the Plan.

7 Description of the Environment, Emissions and Impacts

This section considers the impacts of the proposed development on the following environmental attributes: human beings, flora and fauna, soils and geology, climate, water, air, noise, landscape, solid wastes, road traffic and attributes of the cultural heritage of the surrounding area. Interactions between the above are considered in Section 9.

The most important means of ensuring that any development has a minimal potential for environmental impact is through careful and sensitive design.

Through careful design, which takes account of Best Environmental Practice and Best Available Technology (BAT), the potential for adverse or negative environmental impact can be eliminated or minimised prior to their occurrence, and the effort expended in achieving this at the early stages of a project is generally significantly less than the effort associated with undertaking remedial work after a negative impact has occurred.

7.1 Human Beings

7.1.1 Introduction

Human beings comprise one of the most important elements in the environment. In undertaking development one of the principal concerns is that human beings should experience no reduction in the quality of life as a consequence of the construction, and operational and reinstatement phases of the development. Particular consideration has been given to occupiers of residential properties in the vicinity of the site. Direct effects include such matters as air quality, water quality, noise and interference. Indirect effects relate to such matters as flora, fauna, archaeological heritage and road traffic.

Accordingly, the topic of human beings is being addressed in the Environmental Impact Statement by means of an assessment of the effects of the development on the environment in general, including human beings. Issues such as water quality, air quality, noise, and visual impacts are dealt with under separate section headings throughout the document.

7.1.2 Land Use

Materials Recovery Facility (MRF) located in Churchfield Industrial Estate, John F. Connolly Road, Co. Cork approximately 1.5 kilometres north of Cork City Centre as can be seen in Figure 1.1 of Attachment A.

Any potential impacts of the proposed activities of the waste baling facility on the existing structural and land usage of the area are not considered significant. The overall character of the existing site landscape is that of relatively low lying land in an urban industrialised setting. There will be a slight increase in the size of the Materials Recovery Building (circa 0.3 hectares). The landscape of the area will remain largely unchanged with the existing topographic features.

There will be no alteration in land usage as the site will still be used as a Materials Recovery Facility with only a slight modification to the size of the site

to accommodate the increase waste intake. As a result the existing land use will not change.

7.1.3 Community Impacts and Material Assets

The site which comprises 0.87 hectares is located within an industrial estate which is influenced by residential development and minor agricultural influences.

There are approximately 200 residential dwelling within 500m proximity from the boundary of the facility (Figure 7.1.3). Most of residences within the 500m radius of the site boundary comprise residential housing estates which are predominately located to the north (Garranabraher) and east (Farihill) of the site. The west and southern boundaries of the site are dominated by Churchfield Industrial Estate. There are no medical centres or churches within 500m of the proposed development.

Further south of the site exist large residential areas of Knocknaheeny, and to the south east Farranree.

The majority of traffic accessing the facility travels along a network of third class routes where it may then access Churchfield Industrial Estate and the facility. The value of houses in the vicinity are unlikely to be impacted upon as a result of the proposed development. There will not be an adverse impact on landuse as the proposed development will be included at the existing facility within the current area of 0.88 hectares.

7.1.4 Traffic

A desk based traffic impact assessment was conducted in order to assess the potential impacts of additional traffic movements generated during operation of the waste baling facility (refer to Section 7.5 Traffic). The proposed increase in operations will initially result in an increase in the number of traffic from 82 movements per day to 104 movements per day (entering and leaving the site). Traffic impact assessment results indicate that the waste baling facility will not have a detrimental impact on the road network within the industrial estate. The site is finished with a hard standing area, which is sufficient to deal with the traffic volumes expected at the facility. The access road is of good quality.

It is anticipated that there will be approximately 104 traffic movements a day. An increase of 22 HGV movements per day from current operation levels. While this is a significant increase in vehicle movements given the established roads network, and setting within an Industrial Estate it is anticipated that it should not have an additional impact on the local community. Furthermore the proximity of the facility to the City Centre ensures that the carbon footprint for the transportation of material to the site is significantly reduced.

7.1.5 Socio Economic

The construction of the extension to the Materials Recovery Facility and associated works will result in employment which will benefit the local and regional community. As previously noted the function of the CCR will reduce the volume of waste being diverted to landfill.

It is considered likely that the proposed development will have minimal impacts on the existing population structure of the area.

The proposed development will have a positive impact upon Cork City and the greater Region by providing recycling services and ensuring that more waste will be diverted from landfill hence reducing the negative impact on the environment. Furthermore the proximity of the facility to the City Centre ensures that the carbon footprint for the transportation of material to the site is significantly reduced.

The potential impacts associated with dust, odour, noise, traffic, groundwater and surface water are described in detail in this EIS and should not cause a significant impact if all the mitigation measures proposed are implemented.

7.1.6 Preventative and Mitigation Measures

All site works will be undertaken and controlled in order to minimise the extent of disruption or nuisance to neighbours. Site operations will only take place during specified hours as agreed with the Planning Authority.

7.1.7 Actual Impact on Human Beings

The development will help to meet projected increases in the demand for waste sorting and recycling within the Cork City region and the surrounding hinterland.

The maintenance of current levels of employment at the facility is a positive attribute and the potential for future employment is also likely as a result of the increase waste processing.

7.1.8 Monitoring

Not applicable.

7.1.9 Residual Impact

Not applicable.

7.2 Flora and Fauna

7.2.1 Introduction

This report assesses the potential ecological impacts of a proposed development for Country Clean Recycling located in Churchfield Industrial Estate, John F. Connolly Road, Co. Cork.

The facility proposes to increase the permitted waste processing capacity from the 58,000 tonnes to 100,000 tonnes in addition to a number of site works as specified in Section 5 of the EIS.

The report provides an evaluation of the significance of the potential impacts on the habitats and species within the immediate and local environment; and where necessary recommends measures to mitigate and alleviate any potential negative impacts.

7.2.2 Methodology

A desktop study was undertaken in respect of the proposed development to identify the presence of legally protected species or habitats that may be present within or close to the proposed development site. A field survey of the site was carried out on the May 2008 to identify the habitats, flora and fauna present at the site. The survey consisted of walking systematically through the site and recording habitats, and plant species in addition to relative abundance, condition and degree of disturbance was also noted. The habitats within and adjacent to the proposed development were classified in accordance with "A Guide to Habitats in Ireland" (Fossitt, 2000), published by the Heritage Council.

A mammal survey was undertaken of the site and surrounding environs. The main emphasis of the survey focused on identifying the presence of protected species such as badger, and red squirrel, mountain hare indicated by activity tracks, or dwellings. The mammal survey applied the methodology as described by Animal Tracks and Signs (Bang and Dahlstrom, 2001). The survey also concentrated on identifying the presence of amphibians within the site. Notes were made on bird species present within the site.

During the survey, particular attention was given to the possible presence of habitats and/or species that are legally protected under Irish or European legislation (especially the Flora Protection Order 1999; Wildlife Act 1976; EU Habitats Directive; EU Birds Directive).

The habitats identified were assessed as to their suitability and likely importance to other species of fauna such as birds and amphibians. The potential ecological impacts of the proposed development upon mammals were identified and assessed; and where appropriate mitigation measures have been proposed in order to minimise them.

Consultation has been undertaken with the Cork City Council Heritage Officer, and with the appropriate staff in National Parks and Wildlife Service (NPWS), South Western Fisheries Board, and Bird Watch Ireland.

7.2.3 Receiving Environment

Designated Sites

The site is not located within any designated Natural Heritage Area (NHA), Special Area of Conservation (SAC) or Special Protection Area (SPA). The nearest nature conservation sites to the proposed extension area are outlined in Table 7.2 along with associated site code and brief description.

Table 7.2 Designated Conservation Sites nearest the proposed development.

Conservation Site	Site Description
Cork Harbour SPA (Site Code 004030)	Cork Harbour has is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its population of Redshank. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas Estuary, inner Lough Mahon, Lough Beg, Whitegate Bay and the Rostellan inlet.
Douglas River Estuary NHA (Site Code 001046)	This site is part of the Cork Harbour complex which is of international importance for waterfowl. It ranks as the second most important area in Cork Harbour and supports a vast range of bird species some of which include Teal, Wigeon, Shelduck, Red-breasted Merganser, Oystercatcher, Lapwing, Golden Plover, Curlew, and Black-tailed Goduit. In total it is estimated support peak winter counts of 1,074 wildfowl and 37,355 waders. The site supports four species in nationally important numbers, namely: Shelduck, Red-breasted Merganser, Golden Plover and Black-tailed Goduit
Lee Valley NHA (Site Code 000094)	This site contains areas of intact semi-natural habitats some of which include wet broadleaved woodland, wet grassland communities, dry broadleaved woodland, freshwater marsh which are noted to be of regional conservation importance.
Blarney Bog NHA (Site Code 001857	Blarney Bog is a small area of Reed grass (Phalans anendinnacea) fen, situated in the flat valley floor of the River Blarney. The site supports lowland wet grassland, and freshwater marsh/fen. The area is used by a variety of bird species, which include Hen Harriers a species listed in Annex 1 of the EU Bird's Directive, and also a Red Data Book.
Ardamadane Wood NHA (Site Code 001799	Ardamadare Wood comprises three site which are located north of Blarney village and supports dry deciduous woodland of Oak and Birch, with some scrub woodland and improved agricultural grassland. The sites are important to birds which include woodcock using the area in winter and a variety of species breeding in the area. It also includes interesting aquatic and terrestrial habitats.

None of the habitats within the proposed development site correspond to, or in any way resemble, any habitat listed under Annex I of the EU Habitats Directive.

No rare or protected plant species were recorded during the field survey, and the site is not suspected of supporting any. No impacts on rare flora outside the development boundary are anticipated as a result of either construction or operation of the proposed development.

The site and its immediate environs are not considered to be of importance to any other bird species of high conservation concern, and the site is not of any particular importance to birds in general.

It is considered that the site is unlikely to support other faunal communities of ecological significance and no further negative impacts on fauna are therefore anticipated.

7.2.8 Monitoring

Not applicable.

7.2.9 Residual Impact

Not applicable.

7.3 Soils and Geology

The soils and geology of the area is a composite of many aspects of the environment including flora and fauna, landscape, water and climate. Impacts on these individual aspects are addressed in the relevant chapters of this EIS.

This section deals with the potential impacts of the development on soils and geology.

7.3.1 The Receiving Environment

This chapter examines the geology of the materials recovery facility and the likely significant impacts have been identified and measures that have been proposed to mitigate these potential impacts.

The site comprises of an existing waste recycling facility on a slightly elevated site.

The following guidance documents have been consulted in preparation of this section on geology and hydrogeology

- Geology in Environmental Impact Statements- A Guide. Institute of Geologists of Ireland (September 2002)
- Advice Notes On current practice In Preparation of Environmental Impact Statements. Environmental Protection Agency (2003)
- Guidelines on the Information to be contained in the Environmental Impact statements. Environmental Protection Agency (March 2002)
- Groundwater protection Schemes. Department of Environment and Local Government, Environmental Protection Agency and Geological Survey of Ireland (1999).

This report has collated all available desk study information.

7.3.2 Unconsolidated Geology

Teagasc indicates that the region is underlain by *Acid mineral deep well drained land* (AminDW) which are part of the acid brown earths and brown podzolics soil group.

The underlying subsoil around the site is a till derived from the Devonian sandstone (TDSs).

7.3.3 Bedrock Geology

The site is located to the north side of Cork city. The facility is located on the limb of a synclinal axis. The underlying bedrock is characterised by Devonian Old Red Sandstones. The bedrock formation is known as the Gyleen Formation and is characterised by alternating mudstones and sandstones. The Gyleen Formation is located between the Old Head Formation (Flaser bedded sandstone and minor mudstone) and the Ballytrasna bedrock formation (Purple mudstone with some sandstone).

The Gyleen formation has been classed as a locally important aquifer where bedrock is moderately productive only in local zones (Ll). The interim vulnerability of this aquifer has been classed as extreme (E) The groundwater protection is as a result zoned as an Ll/E.

Local Bedrock Geology and GSI Well Search Results

There were no outcrops seen in the location of the recycling facility. The underlying bedrock has been classified as the Gyleen formation.

Three wells were found located in the vicinity of the proposed development from GSI database using a 2km radius as outlined in Table 7.3. The average depth to bedrock was 3.6m.

Groundwater flow through the site is likely to mirror topography and flow in a North to north-easterly direction towards the River Bride.

Table 7.3 GSI Well Search Database Results

OES No.	DTB	DEPTH	INVTYPE	Grid Reference EASTING	Buffer Distance	Yield m^3/d	Townland
1	0.6	2.1	Dug well	E166820 N73060	100	21.8	Knockpoge
2	4.0	91	WB	E167050 N74250	50	50	Kilnap
3	6.1	99.1	WB	E167500 N74330	50	272	Kilbarry

7.3.4 Aquifers

The Gyleen Formation is classified by GSI as bedrock, which is moderately productive in local zones (Ll). From the desk study undertaken, the depth to rock in this area is shallow .i.e. average of 3.6m.

Vulnerability is a term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater may be contaminated by human activities.

The vulnerability of groundwater depends on: (i) the time of travel of infiltrating water (and contaminants); (ii) the relative quantity of contaminants that can reach the groundwater; and (iii) the contaminant attenuation capacity of the geological materials through which the water and contaminants infiltrate. As all groundwater is hydrologically connected to the land surface, it is the effectiveness of this connection that determines the relative vulnerability to contamination. Groundwater that readily and quickly receives water (and contaminants) from the land surface is considered to be more vulnerable than groundwater that receives water (and contaminants) more slowly and in lower quantities. The travel time, attenuation capacity and quantity of contaminants are a function of the following natural geological and hydrogeological attributes of any area:

(i) the subsoils that overlie the groundwater;
(ii) the type of recharge - whether point or diffuse; and

(iii) the thickness of the unsaturated zone through which the contaminant moves.

The vulnerability of the underlying aquifer is classified as Extreme. The GSI has classified the groundwater protection zone for the underlying aquifer as an LI/E.

7.3.5 Potential Impacts on Soils and Geology

The potential impacts associated with the recycling facility on soils and geology includes:

- Removal of soil from the area of the proposed upgraded development.
- Earthworks will be necessary in order to extend roads and hard cover on the site.
- Trenching for services will require excavations, approximately 800mm deep by 400mm wide, to lay ducts and water mains.

Soil removal will take place as part of ground works for the construction of the site access road and the trenching for services.

7.3.6 Prevention and Mitigation Measures

Removal of overburden during the expansion of MRF is unavoidable.

Oil storage will be necessary for the new development. Small quantities of lubrication oils, required for maintenance and repair works to equipment during construction, will be securely stored in a bunded area within the construction compound. All bunds will be tested in accordance with the waste licence conditions.

A spill kit will be maintained on site during construction. This kit will be equipped with suitable absorbent materials, refuse bags etc to allow for the appropriate cleanup and storage of contaminated materials in the event of a spill or leak occurring.

7.3.7 Actual Impact of Development

Excavation works associated with the development will be in negligible in nature. The majority of the work will only have superficial impacts on the subsoil. There will be little impact on the soils and geology at the site as a result of the development

7.3.8 Monitoring

Lubricant stores on site will be regularly inspected in order to ensure that the risk of entry of potentially contaminating materials into surface and groundwater courses is minimised.

7.3.9 Residual Impact

Not applicable.

7.4 Water

This section deals with the potential impacts of the development on hydrolgeology and surface watercourses.

7.4.1 Receiving Environment

The site is located on the mid slope of a hill. The overall topography of the land is gently sloping to the north east. The nearest surface water body is the Bride River located 1km to the north east. The Bride River flows to the west and is a tributary of the Shournagh River, which in turn is a tributary of the River Lee.

7.4.2 Surface Water

Currently all process water, truck wash water, and storm water (with the exception of roof water), from the site is fed through a Class 1 Full Retention Oil Interceptor which subsequently flows into Cork City Councils foul water sewer.

It is proposed to divert all surface runoff from the hard standing paved areas through the existing Class 1 Full Retention Oil Interceptor and into Cork City Council's foul water system. The existing oil interceptor is sized to cope with surface water runoff from the hard standing areas from the facility.

It is proposed to divert all runoff from the roof to the storm water attenuation tank and then into Cork City Council storm water sewer. The 50 year 30 minute maximum rainfall flow from the roofed area alone would be 61l/s.

The surface water emissions from the site are restricted to that of surface water runoff from hard standing areas after a rainfall event. The total area of the site that currently discharges to surface water is 8,400m^2. This includes 3,600m^2 of roofed area and 4,800m^2 of hardcore area. There will be no risk to groundwater as all process water and rainfall runoff from the site will be directed to both Cork City Council's storm water and foul water sewers.

Table 7.4 Klargester Flow Design and Capicity

	Flow l/s	Drainage Area m^2
Klargester N/S 100 Oil interceptor design specification	100	5,560
50 year, 30 mins max rainfall event	82	4,800

The annual rainfall for the site is 1,206mm (Cork airport data: www.met.ie). Thus implying that the annual surface water runoff from the site is 10,130m^3 (Hard standing and roofed area). The 50 year 30 minute maximum rainfall figure for Cork City is 25.6mm. Under these conditions the volume of storm water run-off from the hard standing area would be 82 litres per second.

Emissions to the foul sewer arise from the truck wash area, the concrete area of facility, and inside of the waste handling area are all diverted through a full Class I Oil Interceptor to discharge to the foul water sewer.

7.4.3 Hydrogeology

The Aquifer Map of Ireland indicates that the area generally is underlain by an Ll aquifer (Locally important aquifer, bedrock which is moderately productive in Local zones).

The Gyleen Formation is considered to be a minor aquifer in south Cork. Permeability in this aquifer results from movements on faults, joints and microfractures. Many of the Devonian clastic rocks are fractured enough to have some permeability, but not enough to be regarded as regionally important aquifer. In general they will yield 0.5 to 3 litres per second with well specific capacities of 5 to 20m^3/day/m.

Groundwater will not be used at the recycling facility. The existing site uses water from the mains supply. All toilet facilities will be serviced by public mains water. Effluent will be connected to the public sewer system located to the south of the site.

7.4.4 Potential Impacts on Surface and Groundwater

The potential impacts of the proposed development on surface and groundwater are outlined below:

- Contamination of groundwater and surface water courses through the ingress of suspended solids from road construction and activities on site
- Possibility of contamination as result of spillage/leakage of chemicals, fuels and lubrication oils used onsite for machinery during the operational phase of the MRF.

7.4.5 Preventative and Reductive Measures

Surface water discharge form the site comprises only uncontaminated run-off from hard standing areas and roofs. The following mitigation measures will be put in place to ensure that there is no impact from site activities on the water quality in the area.

There will be no emissions to groundwater from the proposed development. All wastes and other consumables will be stored in bunded areas.

Potential leachate from the handling of wastes within the building will be collected within a dedicated drainage system and discharged to foul sewer. This will minimise the potential for indirect emissions i.e. leaks to impact on groundwater quality.

- Fuelling of plant equipment during operational works will be carried out at a designated area appropriately bunded, to prevent discharge or accidental contamination to surface or groundwaters.
- The proposed underground diesel tank for on-site equipment will be bunded with a bund that conforms to the standard bunding specification (BS8007-1987) with the capacity of holding 110% of the tank capacity.
- A paved area will be provided around the fuel dispensing area.

- Lubricants, oils and other potentially hazardous substances will be stored on bunded shelves or portable bunded units within the shed to the east of the waste processing building.

- Spill kits (absorbent materials) will be located at strategic positions throughout the facility and in the unlikely event of a spill, will be employed to prevent any spilled material entering the surface water system. The relevant members of staff have received spill prevention and containment training.

- All waste processing operations will be carried out in the main building, and any run-off or leachate generated inside will be discharged to a Class I Full Retention Oil Separator and subsequently to the Cork City Council the foul water drainage system.

- During construction of the extension to the facility, strict building practices shall be adhered to in order to ensure that there are no uncontrolled discharges during construction.

- There will be no abstraction of surface or ground water during construction and operational stages. Water demand during development at the site will be met from the public mains supply.

7.4.6 Actual Impact of Development

The actual impact of the development on surface water and groundwater will be negligible as the development will not be extracting or inputting any water into or out of the surface water areas or groundwater areas.

The implementation of mitigation measures during the operation of the recycling facility will ensure there is no effect on the hydrochemistry of surface water and runoff water from the facility

There will be no extraction of groundwater at the site; therefore, there will be no impact on groundwater levels in the vicinity of the site.

7.4.7 Monitoring

Regular inspection of the class I oil interceptor, gully traps and sewer pipes will be undertaken to ensure the risk of entry of potentially contaminating materials into surface water and groundwater courses is minimised.

7.4.8 Residual Impact

Not applicable

7.5 Air Quality

The ambient air quality in this area is that typical of Zone B which is known as the Cork Conurbation in compliance with the Air Quality Framework directive (Council Directive 96/62/EC, Council of the European communities (CEC), 1996) on Ambient air quality assessment and management and S.I 271 of 2002 Schedule 10).

Air quality in Zone B is typically considered to be good, with the primary source of impact on air quality related to vehicle emissions, and small number of point source emissions in the surrounding area which generally fall into the urban category – smoke from open fires, domestic boilers and vehicle exhaust fumes.

7.5.1 Introduction

The onsite operations at the development involve the transfer, sorting, baling and recycling of waste material. Hence, 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.

As a result of the increase in processing of waste material from circa 50,000 to 100,000 tonnes an increase in dust from HGV movements may impact the site. If a satisfactory dust minimization plan is implemented the potential impact of fugitive dust is expected to be minimal.

There is no waste deposited of waste material onsite and hence no concern for the accumulation of methane and landfill gas.

7.5.2 Potential Impacts

There will be limited direct air emissions associated with the proposed extension. Construction activities on site and traffic movements may generate quantities of dust, particularly in drier weather conditions and cause environmental nuisance. Also, combustion gases from onsite equipment and machinery during the operational phase of the development will contribute towards a decrease in air quality.

Odours from uncontrolled anaerobic biodegradation of waste may cause potential nuisance at the facility. These odours include sulphur containing substances such as (thiols, mercaptans, hydrogen sulphide), amines (Methylamine, Dimethylamine), phenols (4-methylphenol), volatile fatty acids (butyric acid, valeric acid), and chlorinated hydrocarbons trichloroethylene, tetrachloride).

The majority of these compounds have low odour threshold concentrations and as a result are capable of generating odours even in very low concentrations. In addition variations in the concentrations and combinations of these compounds can intensify or reduce odour threshold concentration.

7.5.3 Preventative and Mitigation Measures

The proposed increase in site operations will require a level of operation that will not impinge on the surrounding environment and comply with Environmental Protection Agency monitoring requirements.

The following mitigation measures are recommended during the construction and operation phases of the proposed development:

- Watering and cleaning of site roads during long dry weather conditions to suppress dust emissions as appropriate;
- Proper maintenance of diesel engines and plant machinery to minimise visible smoke which may contribute towards local nuisance.
- Develop and implement a dust management programme incorporating the use of a bowser to suppress dust on all road surfaces as necessary.
- Regular maintenance and cleaning of all roads i.e. use of a vacuum road sweeper or similar to remove drag-out of silt from trucks leaving the site.

The material recovery facility is equipped with odour abatement spray fans which are utilised during hot periods to ensure that malodorous emissions do not impact the surrounding area. To date there have been no odour related complaints at the facility. These masking agents typically have pleasant odours designed to "mask" the unpleasant odour from the facility.

The following mitigation measures have been recommended to further reduce odour emissions:

- The site layout should be optimised to reduce outdoor operations from sensitive receptors;
- Storage or residence time for waste should be kept to a minimum.
- All work surfaces and floors should be cleaned regularly to maintain a suitable standard to prevent the build up of anaerobic bacteria;
- Odour abatement should be utilised in the event that an odour nuisance is generated.

7.5.4 Actual Impact

The Environmental Protection Agency air quality index is used to express complex air quality information in simple terms. Five bands are used in the Irish index which range from "*very good*" air quality to "*very poor*" air quality. The air quality near the Country Clean Recycling facility is classified as being of "*Very Good Quality*" in accordance with the EU Air Framework Directive and EPA Air Quality Zones. The facility has the highest air quality index.

Traffic associated with the site comprises Heavy Goods Vehicles (HGV's) delivering and removing material and processed fractions. All waste collection vehicles entering and leaving the facility will pass over the weighbridge. Once approved they will deposit there loads onsite by driving through the doors located to the south of the Waste Transfer Building and then tipping within the Materials Recovery Facility. The waste transfer vehicles will then proceed to drive out the eastern door of the building and out the exit located to the south of the facility.

The predicted increases in traffic volumes as a result of the development along the existing road network are expected to be relatively moderate. Table's 7.5 and 7.5.1 show the current traffic volumes and the estimated traffic volumes respectively.

Some of the HGV's are equipped with dual compartments and hence can deliver and collect material hence reducing traffic movements to and from the site.

Table 7.5 Current Traffic Volumes on Current Waste Tonnages (2008)

Current Traffic Volumes on Current Waste Tonnages (2008)				
	Movement (In/Out)	**Avg. Weight Per Load**	**No. of Entries**	**Total Weight per Day**
Refuse Trucks (CCR)	In	8.11	12	97.27
Commercial (non Refuse or Skip Trucks)	In	0.51	1	0.51
Skips (Cork Mini Skips)	In	2.94	16	47.11
Other Waste Companies (E.g. Midleton Skis)	In	10.72	1	10.72
Builders Roll on Roll Off Skips (E.g. Ridge Development)	In	8.21	1	8.21
Artic Trucks that take waste out (Full in) _ bringing waste in from other waste companies as back loads.	In & Out	0.00	5	0.00
Artic Trucks Taking Waste Out. (empty In)	Out	0.00	5	0.00
Grand Total			**41**	**163.83**
		Total Movements	**82**	
		Total Annual Weight Per Year (313 days)		51,277.51

Table 7.5.1 Estimated Traffic Volumes for Targeted 100,000 Tonnes

Estimated Traffic Volumes for Targeted 100,000 Tonnes				
	Movement In/Out	**Avg. Weight Per Load**	**No. of Entries**	**Total Weight per Day**
Refuse Trucks (CCR)	In	8.11	14	113.49
Commercial (non Refuse or Skip Trucks)	In	0.51	1	0.51
Skips (Cork Mini Skips)	In	2.94	19	55.94
Other Waste Companies (E.g. Midleton Skis)	In	10.72	6	64.33
Builders Roll on Roll Off Skips (E.g. Ridge Development)	In	8.21	2	16.42
Artic Trucks that take waste out (Full in) _ bringing waste in from other waste companies as back loads.	In & Out	15.00	5	75.00
Artic Trucks Taking Waste Out. (empty In)	Out	0.00	5	0.00
Grand Total			**52**	**325.69**
		Total Movements	**104**	
		Total Annual Weight Per Year (313 days)		101,941.50

At present there are 41 HGV's entering the site per day which equates to 82 movements (in and out) per day. The proposed increase to 100,000 tonnes per annum will result in a doubling in the amount of waste received at the facility. This will result in an increase in normal vehicle movements to increase to 52 entries per day and the number of HGV movements to increase to 104 per day.

The total predicted number of HGVs per day is relatively moderate representing an increase of 23%. While this is a significant increase in vehicle movements given the established roads network, and setting within an Industrial Estate it is anticipated that it should not have an additional impact on the local community. Furthermore the proximity of the facility to the City Centre ensures that the carbon footprint for the transportation of material to the site is significantly reduced.

The proposed addition of a new site entrance 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.

The effects of construction on air quality will not be significant following the implementation of the mitigation measures. There will be no significant point sources of atmospheric emissions. Emissions arising from the site will be typical of those already generated in the existing area of the site. The sorting of materials within the recovery facility will be undertaken in an enclosed shed and a hard surface road in place to reduce the potential to reduce local dust levels.

If all of the abovementioned mitigation measures are undertaken during the construction and operations of the proposed development no significant negative impacts on local air quality are predicted.

7.5.5 Monitoring

Not applicable

7.5.6 Residual Impact

Not applicable

7.6 Noise

This section assesses the impact of the noise emissions from CCR on the existing environment. A noise survey was carried out in the vicinity of the proposed development site to determine ambient noise levels in the existing environment and at local noise sensitive locations. The assessment aims to evaluate the impact of construction and operational noise on the existing environment and propose mitigation measures to reduce any significant impacts predicted.

This assessment consists of baseline noise measurement, noise prediction model, impact assessment, and recommends mitigation measures. Baseline measurements have been taken at each of the noise sensitive locations near the proposed facility and at the site boundary to determine the existing noise levels.

Each of the major noise sources on the site has been identified and reference sound level data for each source has been identified. This data has been used to develop a noise prediction model of the facility. The noise model methodology is used to calculate contribution of the facility to the noise levels at the noise sensitive locations. In addition to assessing the impact of the facility on baseline noise levels, Environmental Protection Agency noise guidelines have been used as the appropriate noise impact criteria in establishing the significance of impacts.

The noise assessment predicts noise levels at the noise sensitive locations and in the area in general, in the form of noise contour mapping. Where the model shows the noise levels at a noise sensitive location will exceed a recommended or statutory noise criterion, mitigation measures are proposed. A further iteration of the model is run to demonstrate the efficiency of any mitigation measures.

7.6.1 The Receiving Environment

In order to characterise the receiving noise environment, a baseline noise survey was undertaken at the site, while the existing area of the MRF was in operation. The survey consisted of a series of both daytime and night-time noise measurements at seven Noise Sensitive Locations (NSL) along the site boundaries and also noise monitoring at point sources within the Materials Recovery Facility during normal operation of equipment.

Specific noise monitoring was carried out at the following noise sources described in Table 7.6.

Table 7.6 Noise Monitoring Locations

Reference Number	Location	National Grid Reference
N 1	Located to the southwest boundary of the Materials Recovery Facility	N1 (E166081 N73528)
NSL 2	Located to the northwest of the Materials Recovery Facility	N2 (E166064 N73629)
NSL 3	Located at the northeast to the Materials Recovery Facility	N3 (E166161 N73630)
NSL 4	Located to the Southeast of the Materials Recovery Facility	N4 (E166155 N73551)
NSL 5	Located near the wood shredder to the east of the Materials Recovery Facility	N5 (E166154 N73580)
Reference Number	**Noise Sensitive Monitoring Locations**	**National Grid Reference**
NSL 1	Located on agricultural land to the east of the Materials Recovery Facility	NSL1 (E166191 N73590)
NSL 2	Located on agricultural land to the north of the Materials Recovery Facility	NSL2 (E166117 N73645)

The abovementioned NSL's are illustrated in Figure 7.6 of Attachment A.

7.6.2 Noise and the Characteristics of Sound

To assist in the understanding of the terms, measurement methods, and assessment criteria used in this report, the following is a brief introduction to the fundamental terms of noise.

Noise is defined as unwanted sound. The impacts of noise are subjective and can vary from person to person. Noise factors such as the frequency, tonal aspects, patterns, existing background noise levels, and the activities being carried out when the person experiences the noise all impact the noise levels experienced by people.

Noise is measured as sound pressure levels; the unit of sound pressure level is the decibel (dB). This is calculated as a logarithm of sound. A change of 10 dB corresponds approximately to halving or doubling the loudness of sound. The use of decibels (A-weighted), dB (A), as the basic unit for general environmental and traffic noise is widely accepted. Decibels measured on sound level meters incorporating this frequency weighting, differentiates between sounds of different frequency in a manner similar to the human ear. That is measurements in dB (A) broadly agree with human beings assessment of loudness. It has been demonstrated that noise levels in dB (A) from a wide range of sources adequately represent loudness.

Sound pressure levels are not directly added to one another, that is, if a sound level of 30 dB is added to another sound level of 30 dB the combined sound level is not a doubling to 60 dB. Rather, as a result of the logarithmic scale, the combined sound level would be 33 dB. Thus every increase of 3 dB represents a

doubling of sound energy levels. Related to this, is the fact that the smallest noise change detectable by the human ear is three decibels.
Another property of the sound decibel scale is that if a sound is more than 10 dB less than another sound, then the total noise level is simply the louder of the two noises. For example, the combined noise level from a source at 30 dB added to another source at 40 dB is 40 dB. As a result, noise assessments are limited to the loudest sources on a site, which determine the sound levels experienced at the noise sensitive locations.

To assist in the understanding of the noise measurement scales, Table 7.6.1 is presented here. This gives the decibel scale (dB (A)) and some common place activities which would typically give rise to Environmental Noise at these decibel levels.

Table 7.6.1 Approximate Representative Noise Levels

Situational/Noise Source	Approximate Noise Level	Sound Pressure	Subjective Description
	dB(A)	μαΠ	
30 metres from a military jet aircraft take-off	140	200,000,000	Painful, intolerable
Rock/Pop concert	105	3,500,000	
Nightclub	100	2,000,000	
Pop/Concert at mixer desk	98	1,600,000	
Passing Heavy Goods Vehicle at 7m	90	630,000	Very noisy
Ringing Alarm Clock at 1 m	80	200,000	
Domestic Vacuum cleaner at 3 m	70	63,000	Noisy
Business Office	60	20,000	
Normal Conversation at 1 m	55	11,000	
Reading room of the British National Museum	35	1,100	
Bedroom in a quiet area with the windows shut	30	360	Very quiet
Remote location without any identifiable sound	20	200	
Theoretical threshold of hearing	0	20	Near Silence

Noise level and frequency varies constantly with time. It cannot be described with a single number. As a result, statistical metrics are commonly used to describe the noise levels.

In order to understand the terms used in this report, some definitions of the terms used are outlined as follows:

LAF10 Refers to those noise levels in the top 10 percentile of the sampling interval; it is the level which is exceeded for 10% of the measurement period. It is used to determine the intermittent high noise level features of locally generated noise and usually gives an indicator of the level of traffic.

LAF90 Refers to those noise levels in the lower 90 percentile of the sampling interval; it is the level which is exceeded for 90% of the measurement period. It will therefore exclude the intermittent features of traffic and is used to estimate a background level.

LAeq The average level recorded over the sampling period. The closer the LAeq value is to either the LAF1O or LAF9O value indicates the relative impact of the intermittent sources and their contribution. The relative spread between the values determines the impact of intermittent sources such as traffic on the background.

Impulsive noise: a noise of short duration (typically less than one second), the sound pressure level of which is significantly higher than the background.

Tonal noise: A noise source that is concentrated in a narrow band of the frequency spectrum.

A-weighted sound levels emphasise the middle frequencies of the noise spectrum, while putting less emphasis on the higher and lower frequencies. This emulates the way that the human ear responds to sound. A-weighted sound pressures are designated by 'dB (A)'.

7.6.3 Monitoring and Measurement

Baseline Noise Measurements

The EPA Guidance note for Noise in Relation to Scheduled Activities recommend maximum noise levels at the nearest noise sensitive properties and all other such properties within a specified radius of the development may be required. Concerning noise limits the following are suggested:

45 dB(A) LAeq, during the night- time (2200 hrs to 0800 hrs).

55 dB(A) LAeq at during the daytime (0800 hrs to 2200 hrs).

The noise should contain no distinguishable tonal or impulsive character.

The measurements were performed using a Brüel & Kjær Type 2250 Modular Precision Sound Analyzer and Cirrus Research 831B Type 1 Data Logging Sound Level Meter. Before and after the survey the measurement apparatus was calibrated using a Brüel & Kjær Type 4231 Sound Level Calibrator or a Cirrus Research: 515 Type 1 Acoustic Calibrator.

Measurements were conducted over the course of two survey periods at intervals as follows:

- Daytime 14:00 hrs to 17:00 hrs on 10/10/2007;
- Night-time 23:20 hrs on the 10/10/2007 to 02:00 hrs on 11/10/2007

During all of the survey periods noted above, it is understood that the facility was in normal operation and the site was not operating after 17:30 hrs.

Boundary measurements were conducted on a cyclical basis. Sample periods were 15 minutes during both the daytime and night-time surveys. The results were saved to the instrument memory for later analysis where appropriate. All primary noise sources contributing to noise build-up was noted.

7.6.4 Noise Modelling Assessment

A site wide noise model was used to calculate the noise contribution from the operational phase activities at the site. The noise impacts associated with stationary (or minimal movement) sources, as well as on-site traffic movements, at the processing facility were predicted using the BS4142 1997 *'Method for rating industrial noise affecting mixed residential and industrial areas'* environmental noise assessment tool.

The model allows for the octave band calculation of noise from multiple sources, includes diffraction and reflection around buildings, terrain effects, and ground region effects. In this manner all significant noise sources and propagation effects are accounted for in the model.

The modelling conservatively assumes that all sources will be operating simultaneously. The reality is that many of the sources will only operate intermittently. This makes the assessment a conservative exercise.

7.6.5 Results of Baseline Noise Measurements

Results of noise monitoring at specific noise sources are contained in Table 7.6.2.

Table 7.6.2 Baseline Noise Results for Country Clean Recycling Ltd.

Location	Daytime Noise Level (dBA)					Nighttime Noise Level (dBA)				
	L_{Aeq}	L_{AMin}	L_{AMax}	L_{A10}	L_{A90}	L_{Aeq}	L_{AMin}	L_{AMax}	L_{A10}	L_{A90}
N 1	70.8	67.5	97.5	72.6	69.0	39.9	35.6	44.8	41.9	38.0
N 2	57.6	50.9	90.9	69.2	51.8	44.4	39.4	50.9	46.9	41.9
N 3	54.2	40.0	79.8	72.1	42.4	37.5	43.9	33.5	39.9	35.6
N 4	67.1	61.3	80.0	70.2	64.1	36.2	31.7	43.4	38.2	34.1
N 5	82.5	72.8	90.3	86.2	77.9	Not Operational				
NSL 1	47.3	42.2	53.3	49.6	44.8	43.3	35.8	53.6	47.9	39.4
NSL 2	44.4	39.3	53.6	46.7	42.3	41.1	37.2	45.9	42.4	39.8

A description of the position of each noise monitoring location is given below.

N1 (E166081 N73528) - This noise monitoring location is adjacent to John F. Connolly Road which is an internal distributor road for other facilities within the industrial estate. As a result this location was subject to elevated noise levels associated with the passing road traffic.

The day time survey was influenced by traffic movement into and around the site, and background influence from traffic on the distributor road travelling to

other facilities within the industrial estate. This resulted in an L_{Aeq} of 70.8 dB(A). The recorded L_{A90} of 69.0 dB(A) highlights the impact of vehicle movement within the site, and external background influence around the industrial estate.

The night time survey had a L_{Aeq} of 39.9 dB(A) with a L_{A90} of 38.0 dB(A). There were no vehicle movements during this period and as a result there is a notable decrease in noise levels within the site. Weather conditions were calm with no animal or human movements noted during the noise measurement. No tonal component was determined at this location.

N2 (E166064 N73629)-This monitoring location is situated to the north-western section of the facility adjacent to a neighbouring site, and green area. The noise level during the day was primarily influenced by vehicle noise and processing of materials within the recovery building. Secondary noise sources were attributed to process within adjacent facilities. The day time survey results were noted to have an L_{Aeq} of 57.6 dB(A) and an L_{A90} of 51.8 dB(A).

The night time survey had an L_{Aeq} of 44.4 dB(A) and a L_{A90} of 41.9 dB(A). There were no distinct noise sources during the survey however vehicles were auditable in the general area. No tonal component was determined.

N3 (E166161 N73630) -This monitoring location is situated to the north-eastern boundary of the facility adjacent to a green undeveloped area. The noise at this location was influenced by vehicle movements within the site, and processing activities from the Materials Recovery Facility. The day time survey results indicated an L_{Aeq} of 54.2 dB(A) and L_{A90} of 42.4 dB(A).

During the night time survey an L_{Aeq} of 37.5 dB(A), was recorded resulting in a L_{A90} of 35.6 dB(A). The noise level during the noise measurement was low which reflects the low intensity of traffic movements from the facility and other facilities in the industrial estate. No tonal component was determined.

N4 (E166155 N73551)- This monitoring location is situated to the south-eastern section of the site at the entrance to the facility. This location is adjacent to John F. Connolly Road and hence the noise measurements were dominated by passing road traffic, and internal traffic within the facility. The measurement was also influenced by processing activities within the Materials Recovery Building and bird song. The day time survey results were L_{Aeq} of 67.1 dB(A) and L_{A90} of 64.1 dB(A).

The night time survey had a L_{Aeq} of 36.2 dB(A) and a L_{A90} of 34.1 dB(A). This highlights the low background noise level during the night time measurement where no vehicle movements were noted. No tonal component was determined.

N5 (E166154 N73580)-This noise measurement was recorded near the onsite timber shredder which is located to the east of the facility. The noise level during the measurement was primarily attributed to the operation of the machine and was clearly auditable. Secondary noise sources were noise negated by the machine. The survey results were L_{Aeq} of 82.5 dB(A) and L_{A90} of 77.9 dB(A).

As part of the planning application it is proposed to roof the shredding machine to minimise noise transmission. No tonal component was determined.

NSL1 (E166191 N73590)-This monitoring location is situated to the east of the site in an undeveloped site adjacent to the facility. This measurement was taken in order to determine noise levels transmitted as from the facility. The noise levels during the day were primarily associated with vehicle noise and facility processing activities. Secondary noise sources included those from adjacent facilities. The day time survey results were L_{Aeq} of 47.3 dB(A), and a L_{A90} of 39.8.

The night time survey had a L_{Aeq} of 44.4 dB(A) and a L_{A90} of 39.4. There were no distinct noise sources during the survey however vehicular activity was noted in the general area. No tonal component was determined.

NSL2 (E166117 N73645)-This monitoring location is situated circa 150 meters north of the facility in an undeveloped site. Similar to NSL 2 noise levels during the day were primarily associated with vehicle noise from the area and noise from MRF facility and adjacent facilities. The day time survey results indicated an L_{Aeq} of 42.3, and an L_{A90} of 38.0..

The night time survey had a L_{Aeq} of 44.4 dB(A) and a L_{A90} of 39.4. There were no distinct noise sources during the survey however vehicular activity was noted in the general area. No tonal component was determined.

7.6.6 Construction Phase Impacts Assessment

There are no legal or statutory criteria relating to the maximum permissible noise levels which may be generated by construction projects. Normally the local authority controls noise emissions/nuisance by imposing construction time limits on sites. They may also, at their discretion impose noise limits for the construction phase by means of planning permission conditions. The only published guidelines on construction noise are National Roads Authority indicative noise values as indicated in Table 7.6.3. Only daytime values are given, as construction outside of the times below is not proposed on this project:

Table 7.6.3 National Roads Authority Construction Phase Noise Guidelines

Day & Time	LAeq(1 hr) dB	LpA(max)slow dB
Monday to Friday 07:00 -19:00	70	80
Saturday 08:00 - 16:30	65	75

7.6.7 Noise Impacts during Construction

The construction phase of this project will consist of earthworks and building construction. Each phase of the construction will entail the use of different machinery and plant, across the site. The earthworks phase will include the excavation of the foundations and the underground services. Heavy earthmoving plant such as excavators and trucks will be used to move and place the excavated material.

Construction noise will be temporary. The likely programme for construction of the site will be scheduled to run for 3 - 6 months. Normal construction working hours will be limited to the daytime, and it is not anticipated that night-time

construction works will be necessary on this project. As the exact construction methods and approach are not known at this stage it is not proposed to model the construction noise. The impacts will be limited in duration, and considering the existing high levels of noise in the region, and the similar construction works carried out in the region, it is not considered that the construction will result in significant impacts at the noise sensitive locations.

Construction phase mitigation measures shall include best practice methods (e.g. BS 5228:1997 Noise and Vibration Control on Construction and Open Sites). Control of construction noise will include measures to control noise from construction plant, equipment, and activities at source. Particularly noisy activities will be carefully planned at times which will cause the least impact. Noise monitoring will be carried out as necessary during construction phase to ensure the site is operating without undue noise impact. Construction plant and equipment used during the construction phase will comply with noise regulations on outdoor plant and machinery.

7.6.8 Assessment Criteria Operational Impacts

The results of the noise model are compared with noise criteria. This allows the impact of the predicted noise levels on the receptor(s) to be objectively assessed. The comparison focuses on the noise level predictions at the nearest noise sensitive locations to the facility, since the EPA criteria apply at these receptors. The EPA Guidance Note for Noise in Relation to Scheduled Activities sets out the general guidance limits for licensed facilities.

This guidance note states to avoid all clearly audible tones and impulsive noise at all sensitive locations, particularly at night-time. A penalty of 5 dB for tonal and/or impulsive elements should be applied to the day-time measured LAeq values to determine LAI values. During night-time no tonal or impulsive noise from the facility should be audible at any noise sensitive location.

In addition to the waste licence criteria, an assessment of the likelihood of complaints is made by analysing the difference in measured background levels from the predicted environmental concentrations. The greater the difference between the noise levels, the greater the likelihood of complaints. The following assessment criterion as outlined in Table 7.6.4 was applied.

Table 7.6.4 Noise Assessment Criteria

Difference over Baseline	Impact
+10 dB	Complaints are likely
+ 5 dB	Marginal Significance
<5 dB	Complaints are unlikely

7.6.9 Noise Scenarios Modelled

Reference sound level data from each significant source on the site has been collected. The data has been sourced from literature and field measurements taken at the existing facility. The reference sound levels used in the model are shown in Table 7.6.5.

Table 7.6.8 Assessment to BS4142 at NSL1

Results	LAeq	Relevant clause	Commentary
Measured noise level	LAeq(30 min) =47.3 dB	6.3	(specific noise source on and the level unaffected by any other noise sources)
Residual noise level	LAeq(30 min) =43.3 dB	6.3	(specific noise off to determine the correction to be made to the measured level using table 1)
Background level	LA90(30 min) =44.8 dB	7.3	(measured just before the factory started up and was deemed to be representative of the background noise when the factory was in operation).
Assessment to be made during the daytime thus the reference time period is 1hr		6.2	
Correction from table 1 is0dB			
Specific noise level	LAeq(60 min) = (47.3 - 0) dB =47.3dB	6.3	(correction from table 1 is zero since measured level is more than 10 dB in excess of residual level. There is no correction for duration as the specific noise operates continuously when on)
Acoustic feature correction	+0dB	8.2	
Rating level	(47.3 + 0) dB = 47.3 dB	8.3	(the facility has no tonal or impulsive noise)
Background level	LA90(15 min) = 43.3dB		
Excess of rating over background level	(47.3 – 43.3) dB = 4.0dB	9	
Assessment indicates complaints are not likely		9	

Table 7.6.9 Assessment to BS4142 at NSL2

Results	LAeq	Relevant clause	Commentary
Measured noise level	LAeq(30 min) =47.3 dB	6.3	(specific noise source on and the level unaffected by any other noise sources)
Residual noise level	LAeq(30 min) =43.3 dB	6.3	(specific noise off to determine the correction to be made to the measured level using table 1)

Results	LAeq	Relevant clause	Commentary
Background level	LA90(30 min) =44.8 dB	7.3	(measured just before the factory started up and was deemed to be representative of the background noise when the factory was in operation)
Specific noise level	LAeq(60 min) = (47.3 - 0) dB =47.3dB	6.3	(correction from table 1 is zero since measured level is more than 10 dB in excess of residual level. There is no correction for duration as the specific noise operates continuously when on)
Assessment to be made during the daytime thus the reference time period is 1hr	6.2		
Correction from table 1 is0dB			
Acoustic feature correction	+0dB	8.2	
Rating level	(47.3 + 0) dB = 47.3 dB	8.3	(the facility has no tonal or impulsive noise)
Background level	LA90(15 min) = 43.3dB		
Excess of rating over background level	(47.3 – 43.3) dB = 4.0dB	9	
Assessment indicates complaints are not likely	9		

The results of the noise model show that the facility will not have a significant impact on the noise sensitive locations assessed. During the day-time the specific noise level is below the existing baseline noise at both locations. The specific noise level is also below the EPA recommended limits for day-time noise. For night-time noise the specific noise level is slightly above the existing night-time noise levels. This will result in an imperceptible impact on noise levels, with complaints unlikely to occur.

With the appropriate site management, the site is capable of operating with no significant increase in the existing ambient noise levels.

7.6.11 Preventative Mitigation Measures

The impact assessment has shown that the development will not have a significant impact on the noise or vibration environment at Noise Sensitive Locations.

The implementation of noise control techniques and site layout will aid in reducing the noise impact from any mechanical plant required to service the building. The noise impact from this source is predicted to be insignificant.

7.6.14 Actual Impact

CCR does not generate significant noise levels. The main auditable sources at site consist of:

- Road Noise from the adjacent local road.
- Site traffic movements.
- Noise from site operations – unloading, loading, sorting, etc

Road traffic particularly from heavy goods vehicles (HGV) from the operational of the Materials Recovery Facility has the potential to increase noise levels at noise sensitive locations along the routes surrounding the site.

As the site will be operating under an EPA waste licence, noise levels from the operation of the facility will be limited to 55dB LAeq during the day time period and 45dB LAeq during the night time period at the nearest noise sensitive locations.

The two Noise Sensitive Locations at NSL1 and NSL2 recorded a daytime noise level (L_{A90}) 44.8, and 42.3 respectively which are compliant with EPA guidlines. The night time levels for Noise Sensitive Location's is complaint with the EPA guidelines ranging from 41.1 to 43.3 dB(A) under the EPA night time level of 45 dB(A). Noise monitoring location 4 recorded the lowest night-time background level of 42.4 dB(A) L_{A90}. A 5dB increase above these levels are generally in agreement with EPA guidance limits of 55dB LA and 45dB LAeq.

Where plant noise is steady and audible during operation, but there are extraneous noise sources such as road traffic, birds or intermittent local activities, L_{A90} usually gives a good approximation of the relatively constant plant noise level. Where the Country Clean Recycling facility is stated as clearly audible or the dominant background source, plant noise may be taken as approximately equal to L_{A90}.

The daytime noise measurements at the boundary locations adjacent to John F. Connolly Road, and in particular at the timber shredder (N1, N3, and N5) ranged between 64.1 and 77.9 L_{A90}. Noise measurements at the boundary locations were attributed to waste delivery/collection trucks arriving at the site and off site traffic movements and by contributory sources from traffic within the industrial estate creating a higher background level.

The L_{A90} figures are more representative of the background levels. However they show results which are slightly higher than the 55dBA levels at the boundary of the site. The levels whilst higher than EPA guidelines emanate within an industrial estate and do not impact Noise Sensitive Locations. It was established that no tonal components were audible during monitoring survey.

During the construction phase of the development, noise levels are predicted to generally remain within the EPA noise limits of 55dB LAeq. There may be short-term, temporary noise level increases. To mitigate the impacts of construction noise the site will implement a noise management plan for the duration of

construction. Working hours will be limited to daytime during weekdays and Saturdays. All night-time, Sunday, and bank holiday working will be avoided, except in emergency situations.

Operational Phase noise levels will consist of static equipment related noise, truck noise and mobile plant related noise. The impacts are largely imperceptible and all noise levels are within the standard EPA guidelines for daytime and night-time noise levels.

The noise level measured and predicated at NL 2, NSL 1, and NSL 2 show that with the improvements in the site layout and operation, there will be no significant change in the noise levels. The main noise source will continue to be road traffic along the John A Connolly road.

The guidance contained within BS4142 1997 *'Method for rating industrial noise affecting mixed residential and industrial areas'* states that in order to ensure that noise levels from a specific source does not significantly impact noise levels at receiver locations, the specific noise should not increase existing background noise levels at receiver locations by more than 5dB(A). The predicted Noise Levels show there is no risk of a noise complaint at the operation of the existing facility. This scenario is the same for the increased capacity facility.

The noise associated with the increased heavy goods vehicles and traffic associated with the site will be imperceptible in the context of the exiting traffic levels on the road. The increase in traffic noise over existing traffic noise is minor due to the improvements in the operation and layout of the site as part of the planning application

In conclusion the facility will be required to meet the Environmental Protection Agency noise limit requirements at the noise sensitive locations and there will be no significant noise emissions from the site.

7.6.15 Monitoring

Noise monitoring will be undertaken as part of the Waste Licence to ensure compliance with EPA limits at Noise Sensitive Locations. It is proposed that noise surveys will be undertaken bi-annually at the facility.

7.6.16 Residual Impact

No residual impact is anticipated. Predictions of typical noise levels from the operation of the facility have been monitored and assessed with reference to the EPA guidance documentation. It is anticipated that with attenuation provided by the building modifications and distance attenuation between the site boundary and the nearest residential properties, this guidance level will be achieved.

7.7 Climate

This section of the Report provides information on local meteorological conditions and evaluated the potential impacts of the proposed development in terms of the effect on the total national emissions of the main greenhouse gases, and the impacts of climate change on the long-term sustainability of the proposed development.

Ireland enrolled in the Kyoto Protocol on 29th March 1998, along with the other EU member states. The EU countries used a "burden sharing" approach to Kyoto and have agreed to cut greenhouse gas emissions as a whole by 8% in 2012 from the 1990 level with individual commitments set for each country. Ireland's commitment under the Kyoto Protocol and this "burden sharing" is to minimise and reduce the main greenhouse gas (carbon dioxide) emissions to a 13% increase on 1990 levels by 2012. As part of Ireland's commitment to climate change the "National Climate Change Strategy" was published in 2000.

In addition, the potential impact of climate change on the long-term sustainability of the rehabilitation solutions will be considered based on the results of the investigations by the Intergovernmental Panel on Climate Change (IPCC, 2001). The resulting impacts in Ireland are outlined in the EPA Climate Change Scenarios and Impacts for Ireland (EPA, 2003).

7.7.1 General

The climate of Ireland is temperate and as a result of being located in the path of the Gulf Stream is free from excessive temperatures, wind and rain than many other countries experience.

7.7.2 Receiving Environment

Information on existing climate was obtained from data collected at the Meteorological Services Office weather station at Cork Airport, approximately 20kms south-west of the site.

This data is summarised as monthly and annual mean data over a 30-year return period (1961 to 1990) and presented in Table 7.7.

The minimum monthly amount of rainfall at Cork Airport was 66.4 mm with a maximum of 138.3 mm. Average annual rainfall over the period was 1194.4 mm.

Temperature ranges between an absolute minimum of –8.6°C and a maximum of 28.7°C. Annual daily mean temperatures are 9.4°C, with a range of 5.0°C to 14.8°C.

Annual average relative humidity ranges between 77% and 87% for the afternoon and morning recording periods respectively.

Mean daily sunshine over the return period was 3.8 hours, with an annual average of 69 days with no sun.

Table 7.7 Monthly and annual mean and extreme values for Cork Airport (1961 – 1990)

Monthly and Annual mean and extreme values 1962-1991

TEMPERATURE (degrees Celsius)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
mean daily max.	7.6	7.5	9.3	11.3	13.8	16.6	18.5	18.2	16.0	13.1	9.9	8.5	**12.5**
mean daily min.	2.6	2.5	3.1	4.2	6.5	9.2	11.1	10.9	9.4	7.5	4.5	3.7	**6.3**
mean	5.1	5.0	6.2	7.7	10.2	12.9	14.8	14.5	12.7	10.3	7.2	6.1	**9.4**
absolute max.	12.6	13.5	15.5	20.5	23.6	25.7	28.7	27.5	24.7	19.0	15.9	13.6	**28.7**
absolute min.	-8.5	-8.6	-6.1	-2.4	-0.9	2.4	4.8	4.9	2.3	-0.4	-3.3	-5.9	**-8.6**
mean no. of days with air frost	6.7	5.6	3.4	1.8	0.1	0.0	0.0	0.0	0.0	0.0	2.4	3.9	**24.0**
mean no. of days with ground frost	15.0	12.7	12.0	9.4	2.9	0.2	0.0	0.0	0.4	2.6	9.5	12.2	**76.8**
RELATIVE HUMIDITY *(%)*													
mean at 0900U.T.C.	90	90	88	83	81	81	83	86	88	91	90	90	**87**
mean at 1500U.T.C.	84	80	75	71	71	72	72	73	76	82	83	86	**77**
SUNSHINE *(hours)*													
mean daily duration	1.70	2.28	3.51	5.21	6.02	5.73	5.40	5.14	4.13	2.80	2.16	1.56	**3.80**
greatest daily duration	7.3	9.3	11.8	13.8	15.4	15.9	15.4	14.2	12.8	9.9	8.5	6.7	**15.9**
mean no. of days with no sun	11	9	6	4	2	3	2	2	4	7	9	12	**69**
RAINFALL *(mm)*													
mean monthly total	138.3	115.6	98.7	67.7	83.4	68.8	66.4	88.7	96.4	125.4	111.1	133.8	**1194.4**
greatest daily total	55.1	48.2	39.3	44.9	49.3	43.3	83.8	64.8	51.8	86.7	69.9	52.2	**86.7**
WIND *(knots)*													
mean monthly speed	12.9	12.6	12.3	11.0	10.6	9.5	9.1	9.2	10.3	11.2	11.6	12.4	**11.1**
max. gust	94	83	70	63	60	51	57	54	64	75	66	68	**94**
max. mean 10-minute speed	58	54	44	41	41	36	40	38	45	48	46	46	**58**
mean no. of days with gales	3.2	2.2	1.7	0.7	0.4	0.1	0.1	0.2	0.7	1.2	1.8	2.5	**15.0**
WEATHER *(mean no. of days with...)*													
snow or sleet	4.5	4.7	3.0	1.1	0.2	0.0	0.0	0.0	0.0	0.0	0.6	2.3	**16.4**
snow lying at 0900U.T.C.	2.7	1.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	**5.6**
hail	1.0	1.1	1.9	1.9	1.1	0.3	0.1	0.1	0.1	0.4	0.3	0.6	**8.8**
thunder	0.4	0.1	0.1	0.2	0.4	0.5	0.8	0.5	0.2	0.4	0.1	0.1	**3.7**
fog	7.4	7.3	7.9	5.9	7.7	8.6	8.5	9.8	10.7				

(Source: Met Eireann)

7.7.3 Actual Impact of Development

Construction activities of the proposed development would be expected to be the dominant source of greenhouse gas emissions as a result of onsite operations. Vehicles will give rise to CO_2 and NO_2 emissions. During the operational phases

of the development the transportation of waste material to the site will also generate greenhouse gases.

The proposed extension to the MRF will initially increase the greenhouse gases during the construction phase of the development, and have a slight impact during the operation phases however as a result of the small scale of the proposed development little variation in the impacts of the development on climate is anticipated.

However the implementation of relevant mitigation measures to control levels of atmospheric emissions will help to minimise the impact of the development on the climate of the area. A proposed landscape plan for the site will assist with absorbing emissions generated onsite. For further information on the proposed landscaping mitigation measures can be seen in Section 7.8 of the EIS.

It is considered that the development will not have a significant impact on the climate of the area.

7.7.4 Monitoring

Not Applicable.

7.7.5 Residual Impact

Not Applicable.

7.8 Landscape and Visual

A visual assessment was undertaken in order to assess capacity of the existing environment to visually absorb the development.

A survey of the site was undertaken to identify potential visual receptors within the existing environment and assess the potential impacts as a result of the development and the present landscape and visual fabric.

The EIS sets out to make an assessment of the likely effects/impacts, environmental advantages, disadvantages associated with the development. The assessment begins with a description of the existing landscape setting to establish baseline conditions. Where necessary mitigation measures are recommended to help reduce, minimise, and mitigate any potential negative impacts associated with the development.

7.8.1 Receiving Environment

The Materials Recovery Facility (MRF) located in Churchfield Industrial Estate, John F. Connolly Road, Co. Cork approximately 1.5 kilometres north of Cork City Centre.

7.8.2 Scenic and Conservation Designations

With respect to the site no designated sites were identified within the immediate vicinity which include the following categories:

- Natural Heritage Areas (NHA's)
- Special Protection Areas (SPA's)
- Special Areas of Conservation (SAC's)

Further details relating to conservations designations can be found in the Flora and Fauna Assessment in Section 8 of the Report.

The scenic amenity areas are denoted in Figure 7.8 and 7.8.2 with respect to the site. No designated views or prospects were identified within the immediate vicinity of the site. With respect to the proposed development site no recreation and tourism areas where identified within 500m of the boundary.

7.8.3 Methodology

The landscape and visual assessment was undertaken through analysis of up to date maps, in conjunction with aerial photographs. OES Consulting undertook the landscape survey of the Materials Recovery Facility and surrounding environs in May 2008.

The objective of the landscape and visual assessment is to identify the existing landscape character and assess the sensitivity to receiving of the proposed development which enables the categorisation of landscape quality.

The survey assessed key features of the landscape and critical view corridors. The significance of the site and visual dominance with the landscape were recorded and assessed against the assessment criteria outlined in Section 7.8.8.

7.8.4 Landscape Assessment Criterion

The landscape was assessed in accordance with the following criteria:

7.8.5 Landscape Sensitivity

The significance of impacts on the character of the landscape is determined based on the sensitivity of the receiving landscape and magnitude of change as a result of the proposed development. The potential impact increases in line with the sensitivity of the area and the magnitude of impact. Differentiation is made between the sensitivity of particular receptors based upon their value within the landscape. Reduced landscape sensitivity or a smaller magnitude of landscape impact moderates and / or lessens the impact significance.

The capacity of a landscape to absorb the visual impact of the proposed extension is assessed. The chief landscape components include landform, vegetation and historical and cultural components. Landform relates to topography, drainage problems and geology. Historical and cultural components include historic landscapes, listed buildings, conservation areas and historic designed landscapes. The sensitivity of the landscape can be assessed according to the Guidelines on Landscape and Visual Impact Assessment (LI/IEA, 2002) from which the following categories have been identified:

Level of Sensitivity	Description
Not sensitive	The landscape can absorb development of any scale without any negative change to the existing character.
Low sensitivity	The landscape would tolerate development of a small scale.
Medium sensitivity	The landscape would only tolerate small-scale development of very sensitive design.
High sensitivity	The landscape would not tolerate development without changing the existing character.

7.8.6 Impact Significance

The assessment of the landscape quality of the proposed extension area was assessed based on its rarity, location and particular attributes as aforementioned. The significance of the landscape impact has been summarised in accordance to the following criteria;

Impact Level	Description
Substantial impact	Total loss or major alteration of key elements/features/characteristics of the baseline landscape character and/or introduction of features considered to be totally uncharacteristic when set within the receiving landscape and its level of sensitivity.
Moderate impact	Partial loss or alteration of key elements/features/characteristics of the baseline landscape character and/or introduction of features that may be prominent but not necessarily considered to be substantially uncharacteristic when set within the receiving landscape and its level of sensitivity.

Slight impact	Minor loss or alteration to one or more key elements/features/characteristics of the baseline landscape character and/or introduction of features that may not be uncharacteristic when set within the receiving landscape and its level of sensitivity.
No Change	Very Minor loss or alteration to one or more key elements/features characteristics of the baseline landscape character and/or introduction of features that may not be uncharacteristic when set within the receiving landscape approximating the no change situation.

The nature of the impact is also assessed in based on the of duration as follows; temporary, short term; long term; and permanent which have been defined in accordance with the Environmental Protection Agency Guidelines on information to be contained in Environmental Impact Statements (2002). The number of years assigned to each duration is outlined below:

Temporary Impact Impact lasting for one year or less.
Short-term Impact Impact lasting one to seven years.
Medium-term Impact Impact lasting seven to fifteen years.
Long-term Impact Impact lasting fifteen to sixty years.
Permanent Impact Impact lasting over sixty years.

7.8.7 Analysis Criteria for View points

The visual significance of the view points was assessment with respect to the magnitude of the visual impact in relation to the sensitivity of the receiving landscape character. The visual assessment was based on the following criteria:

Major	The whole or part of the development is the dominant element within the state view.
Moderate	The whole or part of the development is the important element within the state view.
Minor	The whole or part of the development is the minor feature within the state view.
No Impact	The development is not visible within the state view.

The following scale of significance was applied to assess the viewpoints:

A number of short to long range views were taken around the environs of the site as outlined in Attachment E.

View 1 This view was taken along the Lower Kilmore Road and faces north-eastwards in the direction of Country Clean Recycling Ltd. The facility is not visible in this photograph as a result of the distance from the site and screening influences of topography and houses within the area.

View 2 This view was taken along Bantry Park Road and faces northwest-wards in the direction of Country Clean Recycling Ltd. The view in located near a Panoramic Assessment Point. The facility is not visible in this photograph as a result of the distance from the site and screening influences of topography and houses within the area.

View 3 This view was taken in the Green Area Behind Bridevalley Park and faces southwest in the direction Country Clean Recycling Ltd. The facility is visible to the middle ground of the photograph location. As a result of the distance and existing industrial unites the facility does not dominate the landscape.

View 4 This view was taken in Dunnycove Cresent and looks north-westwards in the direction Country Clean Recycling Ltd. The facility is not visible within from this viewpoint as a result of the undulating topography and physical screening of industry and houses within the area.

View 5 This view was taken from Nash's Boreen looking south towards Country Clean Recycling Ltd. The northern section of the facility is visible from this viewpoint as can be seen in the left middle ground of the photograph. The remainder of the facility is not visible as a result of the position of the facility above the observer.

View 6 This view was taken from View from Green area near Upper Farhill looking southwest towards Country Clean Recycling Ltd. The facility can be clearly seen from this viewpoint as a result of the open landscape and elevation of the site above the observer. The facility whilst visible is less obtrusive when viewed within the context of its setting within the industrial estate.

View 7 View from John F. Connolly Road looking northwest towards the Country Clean Recycling Ltd. Site. The top of the Materials Recovery Facility can be seen from this view along John F. Connolly Road. The remainder of the facility is screened by the presence of other buildings within the industrial estate and as a result it does not dominate the landscape.

View 8 This view can be seen from from John F. Connolly Road looking east towards the County Clean Recycling Ltd. The southeastern section of the facility is visible from this viewpoint. When set within the industrial estate and with the presence of other industrial units within the area it does not dominate the viewpoint.

View 9 This view was taken from Lower Kilmore road looking southwest t owards Country Clean Recycling Ltd. This view illustrates the greatest impact the facility which is clearly visible within the photograph. It is located within an industrial estate and as a result when viewed within the context of the setting does not detract from its setting.

7.8.8 Landscape Character and Classification

The landscape character of the area is dominated by the presence of hard standing areas and built environments. Key elements of landscape include industrial units, housing estates, road corridors, kerbs, and pavements reinforce and extend the urban character. The presence of green areas in the form of agricultural grassland and sports grounds to the north of the site provides a landmark that assists orientation amidst the hierarchy of cluttered complex landscape features.

As stated previously the proposed extension is set within an industrial context. Direct access to and from the site is possible via a series of third class roads that connect to the N22 to the south and the N27 to east.

The visual quality of the area within a 3 km distance comprises features which are natural but predominantly artificial which include a residential areas, and industrial areas, with smaller green area.

The landscape character of the area has been classified as being of low sensitivity. This classification has been assigned as a result of the high degree of hardstanding industrial and residential areas within the vicinity of the site such that *"the landscape would tolerate development of a small scale"*.

7.8.9 Potential Impacts

The proposed extension of the quarry could potentially impact on both the character of the existing landscape, and also on views seen by people living, working and passing through the area.

The potential impacts on the landscape include:

- Visual impact through the proposed extension of the MRF.
- Interference with areas designated as areas of special scenic importance under the County Development Plan.

7.8.10 Mitigation Measures

The Primary mitigation measures are per EPA Guidelines are as follows:

- Total avoidance of certain negative landscape and' visual effects- particularly in terms of sensitive and or prominent landscapes.
- Reduction. Reduce certain impacts where avoidance is not possible. Requires detail consideration of the environmental constraints contained on the site.
- Remedy and minimise the possible adverse negative impact.

It is proposed to landscape the entrance of the site to visually integrate the proposed development with the receiving environment whilst also preserving the amenity value and landscape character of the area.

The landscape plan seeks to integrate the proposed development with the surrounding landscape and enhancing the site where possible to improve its visual aspect. In addition the landscape proposal also aims to screen and filter views from nearby industrial and residential areas, and enhance external road corridors and further reduce the impact of the built environment from outside the site.

Limit space is present within the site to facilitate green space and vegetative species. As a result the landscape plan focused on enhancing the external façade of the facility.

Planting will consist of a variety of tree, shrub species to provide round interest, texture, form and variation. A planting schedule is included specifying species, and indicative growing heights for all trees and shrubs to be planted within the

site as can be seen in Table 7.8 and the planting area can be seen in Figure 7.8.2.

Table 7.8. Tree and Shrub species proposed for Country Clean Recycling

Tree Species	Height (Meters)	Size at planting
Elder *(Sambuccus nigra)*	10	Standard (5m)
Rowan or mountain ash *(Sorbus aucuparia)*	9	Standard (5m)
Sessile oak *(Quercus petraea)*	6	Standard (2.5m)
Downy birch *(Betula pubescens)*	4	Standard (5m)
Hawthorn (Crataegus monogyna)	4	Feathered (3.5m)
Holly (*Ilex aquifolium*)	9	Standard (5m)
Shrub Species	**Height (Meters)**	**Size at Planting**
Broom *(Cytisus scoparius)*	2	Whip (0.75)
Juniper (Juniperus communis)	1.5-2	Whip (0.75)
Hebe sp.	-	Whip (0.75)
Eleagnus sp.	2-3	Whip (0.75)
Fern (Polystichum acutatum)	0.5	Whip (0.35)
French Lavender (Lavandula sloechas)	1	0.5

The site is not visible from any of the designated conservation sites, views and prospects.The main views of the site are limited to the medium-short range view points as a result of its sheltered position within the hill and steep topography which screen it from views the long range views.

The development will be visible from a number of locations but will have a slight and indirect effect upon the quality and character of the area, which has been classified as being of low sensitivity.

Visual receptors include the public or community at large, residents, visitors, and other groups of viewers affected by a proposed development, or structure.

When evaluating the effects on views and the visual amenity of the identified visual receptors, the magnitude or scale of visual change is described by reference to the distance of the viewpoint from the proposed developments.

Figure 7.8.3 of Attachment A provides a description of the zones of visual influence within the surrounding area. These are divided into three categories which include short range (500m), medium range (1000m), and long range (2000m).

Short-range views often experience high visual impacts due to a development, or structure, as the visual receptor is in close proximity to proposed development. Therefore the proposed developments appear larger in scale or magnitude, as opposed to when observed from a long-range viewpoint.

Short range views of the site can be viewed predominantly within the industrial estate, and limited views may be visible by pedestrians, motorists, and residents of nearby housing developments in the local area which include Upper Fairhill, John F. Connolly Road, Bridevally Park, and Nash's Boreen. These views are limited to the short-medium range views from a north and northeast direction as a result of the screening influence of the industrial estate.

Long range views of the site and proposed extension area are restricted as a result of the artificial topographical characteristics of the area which result in a high amount of visual screening due to landform intrusion. Therefore, views to the site are mainly confined to short-medium ranges.

Therefore as a result of the large scale screening influences and tracts of land between the site and long-range views are few in number and minimal in clarity when seen through the intervening distance, and topography. As a result, short-middle range views of the proposed development are the most sensitive. It is envisaged that the proposed amendments to the site, as outlined in Section 7.8.10 of the EIS, would have a negligible impact on existing surroundings due to the existence of the Materials Recovery Facility which amalgamates with the existing industrial character of the area.

The existing landscape character is described as being of *low sensitivity* whereby the landscape would be capable of tolerating small scale development of sensitive design.

The existing Materials Recovery Facility has resulted in "*no change*" on the surrounding landscape resulting in a *"very minor loss or alteration to one or more key elements/features characteristics of the baseline landscape character..."* in accordance with the assessment criteria outlined in Section 7.8.7 of the EIS.

The site is a relatively small element of the whole landscape character area and has a *low* impact on the receiving environment whereby the *"number (or area) of receptors is likely to be fewer and less sensitive and the magnitude of the impact is likely to be moderate or minor."*

The proposed development will be in keeping with the current development and as a result have little or no impact on the landscape character. In addition the landscape plan for the development will assist to enhance external road corridors and further reduce the impact of the built environment and hence not to give rise to significant visual impacts.

8 Cultural Heritage

8.1 Introduction

This section deals with the potential impacts of the development on the cultural and architectural heritage in the area. As part of this assessment the potential impacts of this proposed development were identified and where necessary recommendations were proposed.

There are no recorded archaeological sites, i.e. SMR sites, within a 500m boundary of the site.

Consultation was undertaken with the department of Environment, Heritage and Local Government as part of the Environmental Impact Statement.

8.2 Receiving Environment

Cork City's archaeological heritage is protected under the National Monuments Acts (1930-2004), Natural Cultural Institutions Act 1997 and the Planning Acts. The Record of Monuments and Places (RMP) is a catalogue of sites and areas of archaeological significance which are numbered and mapped. The Zone of Archaeological Potential of Cork City (CO074-122) is identified in the inventory and comprises a Primary Zone (the medieval historic core) and a Secondary Zone as can be seen in Figure 7.8.1 of Attachment A.

The primary zone includes an original monastery of Saint Fin Barre, the medieval walled city and the suburbs at its northern (Shandon) and southern (Barrack Street environs) approaches. Archaeological remains in this zone lie within a metre from the surface in certain areas the city wall lies less than 30cm below the present ground surface to a depth of 2.5m.

The secondary zone covers areas outside the city wall including unwalled medieval suburbs, known sites of medieval religious houses. These include Red Abbey, and parts of the city which were constructed in the seventeenth and eighteenth centuries.

There are 42 RMP sites located outside the Primary and Secondary Archaeological Zones, listed in the inventory.

8.2.1 Potential Impacts

Although there are no known sites within a 500m boundary of the site, as the surrounding area has recorded sites then there is a possibility that unknown sites remain to be discovered.

Therefore, the potential impacts of the development on archaeology at the site include removal and/or damage to underlying archaeological features through removal of topsoil.

The direct and indirect impacts on architectural heritage are listed below:

- Demolition or loss of part of a structure
- Severance from linked structures
- Alteration to the landscape of a building
- Increased visual disturbance

- Increased noise and vibration
- Loss of amenity

8.2.2 Actual Impact

The following monuments located within surrounding environs of the site are listed in Table 8.2.

Table 8.2. Record of Protected Monuments and Structures located within the vicinity of the site

Site No	Townland	Classification	SMR No
1	Garranbraher	Standing Stone	CH-O074-016
2	Garranbraher	Standing Stone	CO074-015
3	Garranbraher	Church	CO074-017002
4	Garranbraher	Graveyard	CO074-017001

8.2.3 Preventative and Mitigation Measures

An investigation of archaeological and historical sources has confirmed that the proposed development site at Churchfield Industrial Estate is situated within an area which does not contain any known archaeological remains.

The MRF site is overlain with concrete with the exception of a small area located to the northeast of the site.

It is recommended the developers will be prepared to take advice from the archaeological authorities at The Heritage Service, Department of the Environment, Heritage and Local Government and the National Museum of Ireland in the event of a discovery of any archaeological levels and/or artefacts.

9 Summary of Significance of Potential Environmental Effects and Interactions

9.1 Cumulative Effects

The development of the extended facility at Churchfield Industrial Estate by CCR will have positive and negative impacts on the receiving environment.

Potential Negative Effects

- Short-term increase in noise levels during construction.
- Potential for a decrease in air quality, due to odour, dust, etc, if the facility is not operated in accordance with best practice.
- Increase in traffic levels in the surrounding area.
- Visual impact of traffic movements and some site operations.

Potential Positive Effects

- An increase in the capacity of the facility to divert of recyclable material away from landfill disposal which will assist the Region in meeting the necessary diversion targets.
- Compliance with waste policy, and Waste Management Plan for the Cork County Council 2004-2009.
- The screening of the facility through the use of native vegetation to integrate it with the surrounding environment.
- The upgrading of existing building and infrastructure in the vicinity of the facility.
- The provision of local employment.
- The provision of a properly controlled and operated waste management facility.

In accordance with Schedule 2 of the EIA 1999 Regulations (S.I. No. 93 of 1999) the likely significant effects on aspects of the environment and the interaction of these effects has been considered.

The significance of impacts of the development is based on the classification structure from the *'EPA Guidelines on the information to be contained in Environmental Impact Statements'* (EPA, *2002)* as outlined in Table 9.1. The summary of potential effects associated with the proposed extension to the Materials Recovery Facility is outlined in Table 9.1.1.

Table 9.1 Classification Criterion

Impact	Description
	Quality
Negative	A change which reduces the quality of the environment.
Positive	A change which improves the quality of the environment.
Neutral	A change which does not have an effect on the quality of the environment.
	Duration
Temporary	Impact lasting one year or less.
Short-term	Impact lasting one to seven years.
Medium-term	Impact lasting seven to twenty years.

Impact	Description
Long-term	Impact lasting twenty to fifty years.
Permanent	Impact lasting over fifty years.
Significance	
Imperceptible	An impact capable of measurement but without noticeable consequences.
Slight	An impact which causes changes in the character of the environment which are not significant or profound.
Moderate	An impact that alters the character of the environment in a manner that is consistent with existing and merging trends.
Significant	An impact which by its magnitude, duration or intensity alters an important aspect of the environment.
Profound	An impact which obliterates sensitive characteristics.
Types	
Cumulative	The addition of many small impacts to create one larger, more significant impact.
"Do Nothing"	The environment as it would be in the future should no development of any kind be carried out.
Indeterminable	When the full consequences of a change in the environment cannot be described.
Irreversible	When the character, distinctiveness, diversity or reproductive capacity of the environment is permanently lost.
Residual	The degree of environmental damage that will occur after the proposed mitigation measures have taken effect.
Synergistic	Where the resultant impact is of greater significance that the sum of its constituents.
Worst case	The impacts arising from a development in the case where mitigation measures substantially fail.

Table 9.1.1 Summary of potential Environment Effects as a result of the Proposed Development

Aspect	*Category*	*Potential Environmental Effects*	*Quality of Potential Impact*	*Duration of the Potential Impact*	*Mitigations Measures*	*Significance of Residual Impact*
Human Beings	Community and Material Assets	Decrease in property value	Negative	Short-term	Site is located within an industrial estate which is zoned for light industrial use.	No Impact
		Recycling Service	Positive		Provide a materials recovery facility to the local community.	Slight
		Spread of litter	Negative		Control Measures in Place	No Impact
		Pest infestation	Negative		Control Measures in Place	No Impact
	Noise	Onsite Machinery	Negative	Short-Term	▪ Speed controls in Place ▪ Recent noise survey indicated that there were no exceedences sensitive locations. ▪ Recovery operations will take place within the Materials Recovery Building. ▪ Noise surveys will be undertaken on a regular basis to ensure no noise exceedences are detected at noise sensitive locations.	Slight
	Traffic	Increase in the volume of traffic utilizing the facility	Negative	Medium-Term	▪ Speed limits within the site ▪ Dual compartments in HGV have to deliver a collect material from the facility and reduce traffic movements.	Slight
	Air	Dust and Air Emissions	Negative	Short	▪ Site roads will be watered during dry periods to reduce generation of dust.	Slight

Aspect	Category	Potential Environmental Effects	Quality of Potential Impact	Duration of the Potential Impact	Mitigations Measures	Significance of Residual Impact
					▪ Proper maintenance of diesel engines and plant machinery to minimise visible smoke which may contribute towards local nuisance. ▪ Develop and implement a dust management programme incorporating the use of a bowser to suppress dust on all road surfaces as necessary. ▪ Regular maintenance and cleaning of all roads i.e. use of a vacuum road sweeper or similar to remove drag-out of silt from trucks leaving the site. ▪ Storage or residence time for waste should be kept to a minimum. ▪ All work surfaces and floors should be cleaned regularly to maintain a suitable standard a) to prevent the build up of anaerobic bacteria; b) Odour abatement should be utilised in the event that an odour nuisance is generated.	
	Odour	Generation of	Negative	Short	The layout of the site has been	Slight

Aspect	*Category*	*Potential Environmental Effects*	*Quality of Potential Impact*	*Duration of the Potential Impact*	*Mitigations Measures*	*Significance of Residual Impact*
		Odour			constructed win order to maintain outdoor operation as far as possible from sensitive receptors. Residence time for biodegradable waste is kept to a minimum All work surfaces are kept clean and regularly maintained to prevent the accumulation of anaerobic bacteria Odour abatement spray is present with the Materials Recover Facility in the even of an odour issue	
	Flora and Fauna	Recreation of habitat for wildlife	Positive	Short-term	Trees will be planted at along the southern boundary of the site to help soften its exterior.	Slight
Ecology and the Natural Environment	Landscape	Visual Impact on Local Community	Negative	Short-term	Landscaping measures to screen the development for the surrounding environs	No Impact
	Archaeology	Disturbance of Archaeological Finds	Negative	Short-Term	Archaeologist will supervise the construction of the concrete area to the northern section of the site.	No Impact

Aspect	Category	Potential Environmental Effects	Quality of Potential Impact	Duration of the Potential Impact	Mitigations Measures	Significance of Residual Impact
	Surface Water/Groundwater	Risk of contamination from onsite activities	Negative	Short-term Medium-term	• Surface water will follow through a Class I oil interceptor prior to discharging to Cork City Council Storm water drainage system. • The oil interceptor will be emptied when required for treatment/disposal at a licenced facility ▪ Spill kits present ▪ Regular monitoring as part of the Waste Licence ▪ risk to groundwater is reduced as the northern section of the site will be paved and impenetrable to potential contamination.	Slight

10 Conclusions on the Interaction of the Foregoing

The proposed extension to the CCR facility at Churchfield Industrial Estate will increase the capacity of the facility to recover recyclable materials thus reducing dependency on landfill.

The previous sections of the EIS deal with any potential impacts that may occur as a result of the proposed development. Where these impacts could be negative, specify mitigation measures are put forward to minimise or neutralise these impacts on the receiving environment. It is not expected that there will be any significant impact from the interactions as a result of the proposed extension to the CCR site.

Attachment A
Figures

Attachment B
Consultation Response Letters

Comhshaol, Oidhreacht agus Rialtas Áitiúil
Environment, Heritage and Local Government

10th November 2008

Our Ref: G2008/868
Your Ref: L1_DAU_20081023

OES Consulting
2nd Floor, FBD House
Fels Point
Tralee
Co. Kerry

Re: Environmental Impact Statement (EIS) County Clean Recycling

A Chara,

We refer to your notification in relation to the above-proposed development received by this office on 29 October 2008. Outlined below are the archaeological recommendations of the Department of the Environment, Heritage and Local Government. Please note that architectural and nature conservation recommendations, if any, will follow in due course.

It is noted that the proposed development is large in scale and appears to directly impact on Recorded Monuments CO074-017002- a Church, and is also likely to have a significant impact on an adjacent Graveyard, CO074-017001-. Further Recorded Monuments may be located within the proposed development area as it is difficult to fully assess the precise proposed development location based on the provided small scale location map. These archaeological monuments are subject to the statutory protection in the Record of Monuments and Places, established under section 12 of the National Monuments (Amendment) Act 1994.

For a development of this scale it is important that the Environmental Impact Assessment (EIS) minimises any direct impact on Recorded Monuments and addresses both the known and predicted archaeological environment. This should include the use of Aerial Photography and the identification or appraisal of any potential or previously unknown archaeological sites or features including those evident on the Ordnance Survey maps. Geophysical Survey should be considered an important component of assisting in this process.

To assist in ensuring that all archaeological issues are adequately addressed outlined below is a Summary outline of Archaeological Measures to be addressed in Environmental Impact Assessments:

Summary outline of Archaeological Measures to be addressed in Environmental Impact Assessments:

- Archaeology should be integrated into all stages of EIA from screening through to implementation
- The description of the project requiring assessment shall be sufficiently clear and detailed to allow identification of all impacts that could affect archaeology.
- The study area shall be large enough to allow a clear understanding of the archaeology and the extent of potential impacts upon it.

The Archaeological component of the EIS shall be self-contained and must include relevant maps of the entire development, aerial photographs etc. and the following information:

- Full description of the proposed development
- Status of application **(Only applies to infrastructure projects)**
  - Consultation
  - Scoping
  - Constraints study
  - Route selection
- Reason for report and stage of planning process to be included:
  - Preplanning
  - Planning
  - Further information
- All archaeological surveys and investigations shall be of a high standard, address the totality of the proposed development and sufficient to allow informed decisions to be taken:
  - Detailed desk research to include- Archive; Historic mapping
  - Details of all known archaeological sites to be impacted upon including wrecks, intertidal etc;
  - Details of all archaeological sites to be impacted upon with details of ownership and status, eg. Protected Structure/RMP/Nat Mon, guardianship etc;
  - Details of all potential archaeological sites, including buildings, to be impacted upon also to address wetlands, intertidal, land reclamation etc;
  - Systematic field work to include- Methodology; All features recorded and described; Digitally mapped; Photographed;
  - Aerial survey- Aerial photographs should be reviewed, interpreted and assessed, included in the report, in conjunction with historic mapping to identify known and unknown archaeology
  - Visual assessment to and from the archaeological sites
  - Geophysical survey
  - Topographical survey

- All components to be fully integrated in the final assessment

- All beneficial and adverse impacts on archaeology shall be assessed and mitigation measures included for all stages of the development works. Also include any future works which cannot be addressed with reason why. These shall include direct, indirect, temporary, permanent and cumulative effects.
  - Storage areas
  - Haulage roads
  - Location of spoil, etc…
- A variety of approaches to mitigation shall be considered, including:
  - Extent of proposed buffer zones
  - Design modification
  - Appropriate investigation
  - Recording measures

Kindly forward any further correspondence in relation to this proposed development to the following address as soon as it issues:

The Manager
Development Applications Unit
Department of Environment, Heritage and Local Government
Dún Scéine
Harcourt Lane
Dublin 2

Mise le meas,

Paul McMahon
Development Applications Unit

An Taisce – The National Trust for Ireland
Tailor's Hall, Back Lane, Dublin 8

20081031-04-1904_01

Emily McCarthy
OES Consulting
2nd Floor
FBD House
Fels Point
Tralee
Co Kerry

31st October 2008

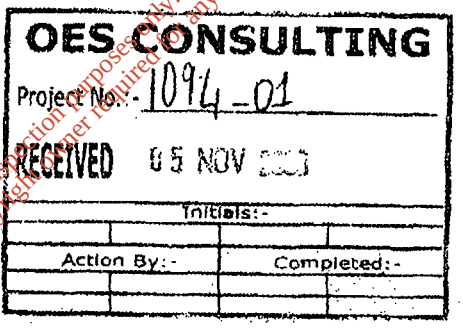
Re: Environmental Impact Assessment Country Clean Recycling

Dear Ms McCarthy,

Information should be provided on condition compliance and environmental management of the existing facility before justifying the extension.

Yours sincerely,

IAN LUMLEY
Heritage Officer



Attachment C
Waste Acceptance Procedure

1.0 PURPOSE

The purpose of this procedure is to outline the measure to be implemented to ensure that waste accepted at the site for treatment complies with the conditions outlined in the waste permit. It is the responsibility of the Plant Supervisor to ensure that this specification is implemented and maintained up to date.

2.0 POLICY

Country Clean Recycling recognises the requirement to ensure that waste handled at the facility is categorised as municipal, or industrial waste and that no hazardous waste as specified in the Waste Management Act, 1996 is accepted at the facility.

3.0 SCOPE

This procedure applies to the control of all waste handled at the Materials Recovery Facility (MRF) at Churchfield Industrial Estate, John F. Connolly Rd, Co.Cork.

4.0 DEFINITIONS

Hazardous Waste Is any such waste covered by the Council Directive 91/689/EEC on Hazardous Waste. The Waste Management Act, 1996 defines it as:

(i) Hazardous waste for the time being mentioned in the list prepared pursuant to Article 1(4) of Council Directive 91/689/EEC of 12th December, 1991, being either

(ii) Category Waste I that has any of the properties specified in Part II of the Second Schedule, or

(iii) Category II waste that-
- Contains any of the constituents specified in Part II of the Second Schedule and
- Has any of the properties specified in Part III of the said schedule

(iv) Such other waste, having any of the properties specified in Part III of the second schedule, as may be prescribed for the purposes of this definition.

5.0 RESPONSIBILITY

5.1 Specification Responsibility: Supervisor

Waste Compliance/Categorisation Responsibility: Customer.

6.1 Operations

6.1.1 All waste handled at the facility will be characterised using the procedure outlined in Figure H.3.1. for characterising waste.

6.1.2 Waste from each individual customer will be categorised as either municipal or industrial waste and an appropriate European Waste Catalogue Code (EWC) assigned to the waste.

6.1.3 Each Load of waste will be inspected and verified on site to confirm that the waste is the same as that subject to compliance testing, and described in any accompanying documentation.

Onsite inspections will entail a visual inspection of the load prior to unloading within the MRF. If the contents of the load cannot be verified by visual inspection more detailed testing will be required to make a definitive evaluation.

6.1.4 A Municipal Waste Characterisation Survey will be undertaken periodically to assess that the waste arriving onsite will be checked for:

- Documentation to ascertain origin and nature of the waste.
- Visual inspection as previously detailed.
- Periodic compliance testing if required.
- Disposal in accordance with the Waste Permit.

6.2 Inspections

- Visual inspections and documentation inspections shall be undertaken on each load received at the facility.
- Other more detailed inspection will be undertaken in accordance with the Waste Permit requirements.

6.2 Reporting

- Any waste which does not conform to that specified within the Waste Permit will be held onsite and Cork City Council will be informed.
- A senior member of staff will compile a report outlining the possible sources and composition of the material.
- A disposal strategy for such waste will be agreed with Cork City Council prior to disposal.

6.3 Communication

All reports/documentation will be retained onsite within the facility.
Cork City Council will be informed of any proposed alteration to the is waste acceptance procedure.

6.4 Training

Personnel involved in waste acceptance must have attended a training course in the implementation of this procedure.

6.5 Administration

The activity file for this procedure shall reside within the site office. Compliance with the procedure shall be confirmed through the presence of documentation for scheduled treatment inspections.

Waste Acceptance Report

Date

Customer

Item	Checked	Comments	Name of Assessor
Waste Description			
Documentation			
Visual Inspection			
Odour			

Report on Waste Acceptance Problem

Location Time

Details

Corrective Action

Signed: **Approved:**

Spotted Redshank (1-5) and Green Sandpiper (1-5). Numbers vary between years and usually a few of each of these species over-winter.
The wintering birds in Cork Harbour have been monitored since the 1970s and are counted annually as part of the I-WeBS scheme.

Cork Harbour has a nationally important breeding colony of Common Tern (3-year mean of 69 pairs for the period 1998-2000, with a maximum of 102 pairs in 1995). The birds have nested in Cork Harbour since about 1970, and since 1983 on various artificial structures, notably derelict steel barges and the roof of a Martello Tower. The birds are monitored annually and the chicks are ringed. Extensive areas of estuarine habitat have been reclaimed since about the 1950s for industrial, port-related and road projects, and further reclamation remains a threat.

As Cork Harbour is adjacent to a major urban centre and a major industrial centre, water quality is variable, with the estuary of the River Lee and parts of the Inner Harbour being somewhat eutrophic. However, the polluted conditions may not be having significant impacts on the bird populations. Oil pollution from shipping in Cork Harbour is a general threat. Recreational activities are high in some areas of the harbour, including jet skiing which causes disturbance to roosting birds.

Cork Harbour has is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its population of Redshank. In addition, there are at least 15 wintering species that have populations of national importance, as well as a nationally important breeding colony of Common Tern. Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Golden Plover, Bar-tailed Godwit, Ruff and Common Tern. The site provides both feeding and roosting sites for the various bird species that use it.

4.7.2004

SITE NAME: BLARNEY BOG, CO. CORK

SITE CODE: 001857

Blarney Bog is a small area of Reed grass (Phalans anendinnacea) fen, situated in the flat valley floor of the River Blarney. It is located a half km west of Blarney Town and 4.5 km north-west of Cork City. It is bounded on the north side by a new road development and to the south of the river by the fences of the agricultural land abutting the wetland site. This wet area was formed through ponding of the Blarney River by a natural blockage at Gothic bridge to the west of the site (probably a fault in the underlying bedrock). Sediments brought downstream from the Blarney River and its tributaries have accumulated and the soil is a fine silt with some peat. There was greater peat accumulation on the south side of the river (Inchancomain townland) but this has been cut away in the past, the only evidence of this activity remaining at the field edges. The vegetation on the south side is also of a more acidic nature. The area is damp throughout the year and is flooded in the winter particularly at the western side of the site.

The main habitats of the area are lowland wet grassland, both grazed and ungrazed and freshwater marsh/fen. The dominant species of the wet grassland are Reed grass (Phalan's anundinacea), Soft Rush (Juncus effusus) and grasses such as Creeping Bent (Agrostis stolonifera), Tufted Hair-grass (Deschampsia caespitosa) and Yorkshore Fog (Holcus lanatus). Land to the west is generally wetter with herbs such as Greater Tussock-Sedge (Carex paniculata), Greater pond-sedge (Carex riparia) and Bladder-sedge (C. vesicana); commonly occurring herbs are Meadowsweet (Filipondula almaria) and Common Valenian (Valeniana efficinalis), locally distributed in the sward are Yellow Loosestrife (Lysimachia vulgaris) and Purple Loosestrife (Lythrum salicana). The land nearer the Blarney road is drier with a mixture of grasses and sedges, the ungrazed areas are more tussocky with herbs such as Common Sand (Rumex acetosa) and Tormentil (Potentilla erecta). There is a new road development occurring in the north of the site and soil/subsoil has been bulldozed onto some of this grassland, there is considerable disturbance to the area (see Ranger Photograph 2).

South of the river the land is wetter with scattered Willow Trees (Salix species), Purple moor-grass (Molinia caerulea), Tufted Hair-grass (Deschampsia caespitosa) and Soft rush (Juncus effusus) dominate the vegetation, the wetter areas supporting the growth of March cinquefoil (Potentilla palustris), Bog bean (Menyanthes trifoliata), Devil's bil scabious (Succisa pratensis) and Common yellow-sedge (Carex demissa). Towards Horgan's bridge in the east of the site, is an area dominated by tussocks of Greater tussock-sedge (Carex paniculata). The water course flora is not particularly rich but contains Common duckweed (Lemna minor), Floating sweet-grass (Glyceria fluitans) and Fool's Watercress (Apium nodiflorum), less frequently found are Branched and Unbranched bur-reed (Sparganium erectum and S. emersum) and Pondweeds (Potamogeton species).

The area as whole is used by a variety of bird species, birds noted to be breeding in the site include: the Sedge and Grasshopper Warblers, Reed Bunting, Stonechab, Meadow Pipet, Snipe and Mallard. In the water Snipe and Mallard are seen feeding in the area and also Teal. Hen Harriers, a species listed in Annex 1 of the EU Bird's Directive and also a Red Data Book species

whose status is threatened in Ireland, are regularly seen in this area, hunting over the wetter ground and sometimes nesting in the reed beds.

The area is threatened by the road developments to the north of the site, this has disturbed and destroyed some of the grassland and the closer proximity of the traffic may disturb the birds which breed in the area. It may also alter the hydrology of the site.

SOURCES:

1. Report on lands at Blarney Bog, Co. Clare for Cork County Council by CAAS (Environmental Services) Ltd. R. Goodwillie Sept. 1990

2. Ranger site return 1993.

SITE NAME: ARDAMADANE WOOD

SITE CODE: 001799

Ardamadare Wood is located north of Blarney village, 6km north-west of Cork City. It is situated along the banks of the River Martin. The site is bounded in parts by the river, the old Blarney-Mallow road and on the eastern side by an embarkment and the new Cork road. This site comprises mainly dry deciduous woodland of Oak (Quercus petraea) and Birch (Betula pubescens) with some scrub woodland and improved agricultural grassland. Threats to this particular site include eutrophication of the river from fertilizer run off and litter/domestic rubbish dumping in the woodland adjacent to roads.

The following description is compiled from the An Foras Forbatha (1972) report for 3 sites around Blarney - Ardamadare Woods (1799) north of the village and 2 sites to the south - Blarney Castle Woods (1039) and Blarney Lake (1798). Together they encompass some 53 ha.

The woodland at Blarney has a rich soil due to the influence of the nearby limestone and is able to support a wide variety of plants and animals. Blarney Castle Woods comprises an old estate woodland with Oak, Ash (Fraxinus excelsior), Sycamore (Acer pseudoplatanus) and Beech (Fagus sylvatica). Ardamadare Woods consists of a patch of scrub with Hazel (Corylus avellana) and Ash and a linear Oak and Birch Wood stretching northwards along the R. Martin towards Waterloo (the river is also included in this site). The Blarney lake site includes the artificial lake near the Castle.

The base-rich woodland of Blarney Castle Wood is probably the most interesting site botanically, with a species-rich groundflora. Species include Pignut (Conopodium majus), Sanicle (Sanicula europaea), Garlic mustard (Alliana petiolata), Goldilocks buttercup (Ranunculus auricomus) and the Violets - Common dog-violet (Viola tiviniana) and Early dog-violet (V. reichenbachiana). The two parasitic species - Ivy broomrape (Orabanche hederae) and Toothwort (Lathraea squamaria) are found occasionally, usually in places with deeper soils, while the rocky areas support the growth of wood melic (Melica uniflora) and Bearded Couch (Elymus caninus).

The flora of Ardamadare Wood is not as species-rich and includes species of more acid conditions such as Great Wood-rush (Luzula sylvatica). The three sites are of some importance to birds with Woodcock using the ara in winter and a variety of species breeding in the area.

Near the river and lake the aquatic communities include beds of sedges (e.g. Greater pond-sedge (Carex riparia), Bladder-sedge (C. vesicaria), Smooth-stalked sedge (C. laevigata) and Great Fen-sedge (Cladium mariscus) and stands of tall herbs such as Meadowsweet (Filipendula ulmaria), Great willow herb (Epilobium hirsutum) and Hemp-agrimony (Eupatorium cannabinum). At the rivers edge are found Nodding bur-marigold (Bidens annua), Blue water-speedwell (Veronica anagallis-aquatica) and Mints (Mentha species).

Threats to the survival of these sites are - coniferous afforestation of the woodland communities and the encroachment of agricultural activity e.g. grazing pressures, clear felling and agricultural improvement. Where possible, management agreements should be made with the landowners.

As a whole, the three sites compose a very caved area including interesting aquatic and terrestrial habitats. The base-rich woodland (Blarney Castle Woods) is an example of a type not widely found in Cork County,where acid upland woods are more common. The sites are all easily accessible and close to Cork city, and they could therefore form a useful environmental education resource within the area.

18/12/1995

SITE NAME: DOUGLAS RIVER ESTUARY

SITE CODE: 001046

This is a large site situated in the north-west corner of Cork Harbour, stretching from Blackrock to Passage West. It is an integral part of Cork Harbour, which contains several other N.H.A.'s. Geologically, Cork Harbour consists of two large areas of water in a limestone basin, separated from each and the sea by ridges of Old Red Sandstone. This site occurs within the upper harbour and consists of extensive mudflats, formed from fine silts, bisected by the Douglas River. Damp grassland occurs on part of the southern side, extending to some low islands which are inundated in extreme tides.

Generally, mudflats within Cork Harbour are covered in algal mats (Enteromorpha sp.) with some growth of cord-grass (Spartina sp.). Here the spread of spartina is quite advanced and considered a threat to the site. Some saltmarsh occurs, with characteristic species including Arrowgrass (Triglochin sp.), Sea Aster (Aster tripolium) and sedges (Carex spp.). There is a narrow fringe of common reeds (Phragmites australis) along parts of the shore.

An area of pasture adds to the value of the site since it provides an important roost for many wading birds, including Black-tailed Goduit, and a feeding area for around 400 Wigeon.

The prime importance of this site is its birdlife and it ranks as the second most important area in Cork Harbour (l99l-92). It is a valuable area and high tide roost for waterfowl; a typical count, provided by the l986 An Foras Forbartha County Report, is as follows (average and peak winter counts given):- Teal (48; l8l), Wigeon (l6l; 550), Shelduck (l68; 577), Red-breasted Merganser (80; l20), Oystercatcher (3l4; l,l00), Lapwing (948; 5,485), Golden Plover (l,l48; 3,400), Curlew (236; 675), Black-tailed Goduit (220;48l), Bar-tailed Goduit (220; 474), Redshank (l97; 400) and Dunlin (684; 2,543). This gives totals of 4l2 (l,074) wildfowl and 3,563 (37,355) waders.

Based on the above figures, four species occur in nationally important numbers, namely: Shelduck, Red-breasted Merganser, Golden Plover and Black-tailed Goduit. However, the bird populations tend to be mobile and this site must be considered an essential part of Cork Harbour which is of international importance for waterfowl.

The Irish Biogeographical Society (Newsletter, March l990) report that the saltmarsh supports an unusual assemblage of moths.

The mains land use within the site is conservation, with the Douglas Estuary designated a wildfowl sanctuary. Some damage has occurred to the site through water pollution, including sewage, tidal littering and the spread of spartina. However, perhaps the greatest threats come from current road developments and a proposed marina, both of which could lead to serious loss of mudflat areas.

This site is of interest because it is an essential part of the Cork Harbour complex and contains much higher densities of waders than would be expected from its relative size. It is ranked as the second most important area within the harbour.

SITE NAME: LEE VALLEY

SITE CODE: 000094

This site occupies five separate sections of the valley of the River Lee, immediately to the west of Cork City. One section passes close to Ballincollig, and the Ballincollig Regional Park makes up a portion of the site. A diverse range of semi-natural habitats occurs here, with those described below being the most prevalent:

Wet broadleaved woodland has developed in a number of places on the river side. The dominant trees are either Alder (*Alnus glutinosa*), Grey Willow (*Salix cinerea*) or Small-leaved Elm (*Ulmus minor*). Downy Birch (*Betula pubescens*) is often present also. Typical species occurring in the ground flora include Cock's-foot (*Dactylis glomerata*), Yorkshire Fog (*Holcus lanatus*), Canary-grass (*Phalatis* sp.), Meadowsweet (*Filipendula ulmaria*), Cuckooflower (*Cardamine pratensis*), Common Marsh-bedstraw (*Galium palustre*), Wild angelica (*Angelica sylvestris*) and Lesser Celendine (*Ranunculus ficaria*). Other parts have abundant Hemlock Water-dropwort (*Oenanthe crocata*), Marsh-marigold (*Caltha palustris*), Yellow Iris (*Iris pseudacorus*), Fools Water-cress (*Apium nodiflorum*) and Purple loosestrife (*Lythrum salicaria*).

Some areas behind the riverbank are frequently flooded and support wet grassland communities. Species of the wet woodland ground flora described above occur in many of these stands, as do Sweet Vernal-grass (*Anthoxanthum odoratum*), Ribwort Plantain (*Plantago lanceolata*), Meadow Buttercup (*Ranunculus acris*), Silverweed (*Potentilla anserina*), Red Clover (*Trifolium pratense*) and Common Sorrel (*Rumex acetosa*).

Dry broadleaved woodland exists in other sections of the valley, with the most important trees being Ash (*Fraxinus excelsior*), Oak (*Quercus* sp.) and Holly (*Ilex aquifolium*). Hazel (*Corylus avellana*) and Hawthorn (*Crataegus monogyna*) are important components of some stands, while the exotic species Beech (*Fagus sylvatica*) and Sycamore (*Acer pseudoplatanus*) occur in others. The ground flora of many of these woods is relatively species-rich and includes Wood Anemone (*Anemone nemorosa*), Herb-robert (*Geranium robertianum*), Honeysuckle (*Lonicera periclymenum*), Ground-ivy (*Glechoma hederacea*), Bramble (*Rubus fruiticosus* agg.), Bluebell (*Hyacinthoides non-scripta*) and False Brome (*Brachypodium sylvaticum*).

In places, Hard Fern (*Blechnum spicant*), Great Wood-rush (*Luzula sylvatica*), Male-fern (*Dryopteris filix-mas*) and Wood Speedwell (*Veronica montana*) are common, and one stand has a very well-developed shrub layer of Spindle (*Euonymus europaeus*).

Unimproved dry grassland occurs on an area of soil that has probable glacial origins. Field Wood-rush (*Luzula campestris*), Sweet Vernal-grass, Dog's-tail (*Cynosurus cristatus*), Spring-sedge (*Carex caryophyllea*), Wild Carrot (*Daucus cartota*), Common Birds-foot-trefoil (*Lotus corniculatus*), Glaucous sedge (*Carex flacca*), White Clover (*Trifolium repens*) and Cowslip (*Primula veris*) are all present here.

Freshwater marsh fringes the river itself in places. Here, Bulrush (*Typha latifolia*), Branched Burr-reed (*Sparganium erectum*), Bottle Sedge (*Carex rostrata*), Canary-grass, Meadowsweet, Water Horsetail (*Equisetum flaviatile*),

Marsh-marigold and Water Mint (*Mentha aquatica*) are all species frequently encountered.

A number of wetland bird species breed here, including Mallard, Heron, Sedge and Grasshopper Warblers and Reed Bunting and two rather locally distributed butterflies, the Small Blue and the Wood White occur.

Land-use in the site consists of a little cattle-grazing and hay-making in the grasslands. Sections of the valley have been improved for agriculture in the past, so that the site now consists of five sub-sites. This should not be allowed to infringe further into the site. The spread of Sycamore poses a threat to the naturalness of parts of the woodlands, as does river engineering works to the river bank communities. Recreation is important in the Valley, especially in the Ballincollig Regional Park.

The diverse range of intact semi-natural habitats in the Lee Valley makes this a site of regional conservation importance.

2.11.1999

APPENDIX F

An Taisce Correspondence in relation to EIS for the expansions of a Materials Recovery Facility.

An Taisce – The National Trust for Ireland
Tailor's Hall, Back Lane, Dublin 8

20081031-04-1904_01

Emily McCarthy
OES Consulting
2nd Floor
FBD House
Fels Point
Tralee
Co Kerry

31st October 2008

Re: Environmental Impact Assessment Country Clean Recycling

Dear Ms McCarthy,

Information should be provided on condition compliance and environmental management of the existing facility before justifying the extension.

Yours sincerely,

IAN LUMLEY
Heritage Officer

OES CONSULTING
Project No.:- 1094-01
RECEIVED 05 NOV 2008
Initials:-
Action By:- Completed:-