Comhairle Contae Chorcaí
Cork County Council

Halla an Chontae,
Corcaigh, Éire.
Fón: (021) 4276891 • Faics: (021) 4276321
Suíomh Gréasáin: www.corkcoco.ie
County Hall,
Cork, Ireland.
Tel: (021) 4276891 • Fax: (021) 4276321
Web: www.corkcoco.ie

Administration,
Environmental Licensing Programme,
Office of Climate, Licensing & Resource Use,
Environmental Protection Agency,
Headquarters,
PO Box 3000,
Johnstown Castle Estate,
County Wexford.

07 March 2011

Re: Garryvoe Agglomeration (Register No: A0363-01) Regulation 25(c)(ii) Further Information Response

Dear Sir/Madam,

With reference to your letter of the 14th of December 2010, please find the following attached:

- 1 Original of the Garryvoe Regulation 25 Further Information Response
- 1 Copy of the Garryvoe Regulation 25 Further Information Response
- 1 CDROM with the Further Information Response in PDF Format

Yours faithfully,

Noel O'Keeffe
County Engineer & Director of Water Services

Garryvoe Regulation 25 Further Information Response

Question 1 **Assess the likelihood of significant effect of the waste water discharges from the above agglomerations on the relevant European sites by referring to Circular L8/08 "Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments" issued by the Department of Heritage and Local Government. In particular, the flow diagram in Appendix 1 should be completed and the results of each section recorded. Provide details of the results of this assessment within one month of the date of this notice.**
If significant effects are likely then and appropriate assessment must be carried out and a report of this assessment forwarded to the Agency within one month of the date of this notice.
You are advised to provide the requested information in accordance with the "Note on Appropriate Assessments for the purposes of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. 684 of 2007)" which is available at www.epa/downloads/forms/lic/wwda/.

Wastewater Discharge Licence Certificate of Authorisation Application: A0363-01 Garryvoe

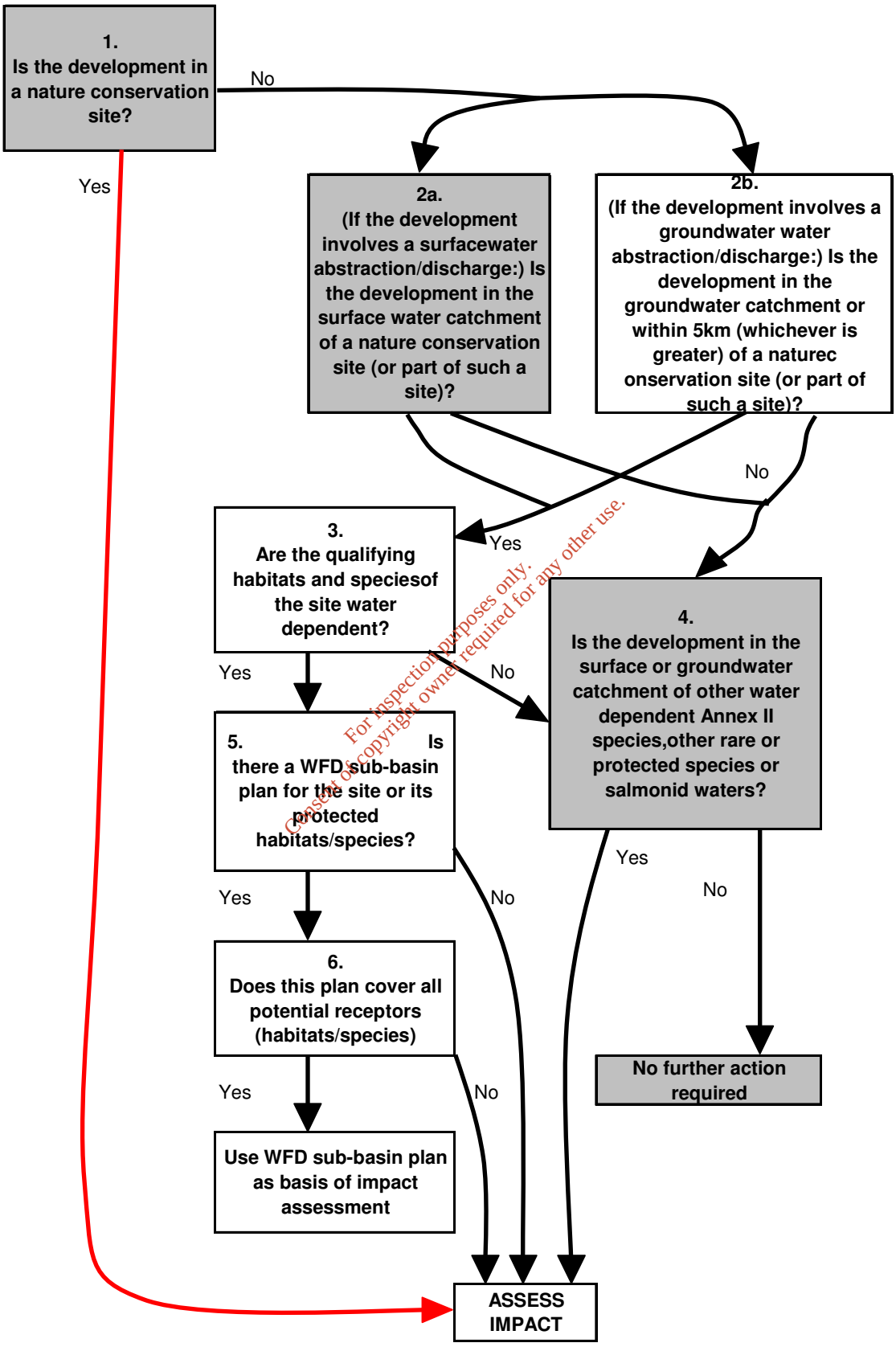
Circular L8/08 2 September 2008
Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments

APPENDIX 1
Water Services Schemes - Natural Heritage Checklist for Local Authorities

What projects must be screened?

For new projects and significant changes to any existing operations, if the answer is 'yes' to any of the following, the project (i.e. construction, operation and maintenance) must be screened for its impacts:	
1. Is the development in or on the boundary of a nature conservation site NHA/SAC/SPA?	Yes
2. Will nationally protected species be directly impacted? Wildlife Acts (1976 and 2000), Flora Protection order (S.I. 94 of 1999)?	No
3. Is the development a surface water discharge or abstraction in the surface water catchment, or immediately downstream of a nature conservation site with water dependant qualifying habitats/ species?	No
4. Is the development a groundwater discharge or abstraction in the ground water catchment or within 5 km of a nature conservation site with water-dependant qualifying habitats/species2?	No
5. Is the development in the surface water or groundwater catchment of salmonid waters?	No
6. Is the treatment plant in an active or former floodplain or flood zone of a river, lake, etc?	No
7. Is the development a surface discharge or abstraction to or from marine waters and within 3km of a marine nature conservation site?	No
8. Will the project in combination with other projects (existing and proposed) or changes to such projects affect the hydrology or water levels of sites of nature conservation interest or the habitats of protected species?	No

Flow Diagram with Questions relating to the Agglomeration of Garryvoe Shaded Red



Conclusion: An appropriate assessment is required for Garryvoe

Habitats Directive Assessment (Screening Report) in respect of Application by Cork County Council to the EPA for Wastewater Discharge License for Garryvoe Agglomeration.

March 2011

1 Introduction

1.1 Garryvoe septic tank and its outfall are located in the south of the agglomeration adjacent to the beach. Garryvoe is situated approximately 14 Kilometres southeast of Midleton. The septic tank was built in the 1960s. Currently a PE of 424 is treated by the septic tank. However the total PE figure given in the application is 466, which allows for some future development over the lifetime of the licence. The septic tank outfall discharges to Ballycotton Bay (Water Body Code IE_SW_040_0000), the adjoining coastal area.

1.2 The septic tank outfall is located within Ballycotton Bay SPA (site code 004022). There also are 2 proposed Natural Heritage Areas near Garryvoe. The septic tank outfall is located within the Ballycotton, Ballynamona and Shanagarry pNHA (site code 000076). The Ballycotton Bay SPA is designated under the **EU Birds Directive (79/409/EEC)** as transposed into Irish Law under the European Union (Natural Habitats) Regulations SI 94/1997. As this is the case, and in accordance with requirements under this Directive, the potential impacts of proposed developments that have the potential to impact on Special Protection Areas must be assessed. The procedure to do this is called a **Habitats Directive Assessment**. The purpose of such an assessment is to identify whether there may be potential for elements of the project to have a significant impact on nature conservation sites within its impact zone, and if so, to predict the potential for such impacts to affect the overall integrity of such nature conservation sites. The European Union has provided guidance as to how to make a Habitats Directive Assessment which identifies four main stages in the process as follows:

Stage One: Screening
The process which identifies the likely impacts upon a Natura 2000 site of a project or plan, wither alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant.

Stage Two: Appropriate assessment
The consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts.

Stage Three: Assessment of alternative solutions
The process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site.

Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain.
An assessment of compensatory measures, where in the light of an assessment of imperative reasons of overriding public interest, it is deemed that the project or plan should proceed.

1.3 This document brings together all of the information necessary to make determination as to whether there are likely to be significant impacts arising from the discharge from

the Garryvoe septic tank outfall on the adjacent Ballycotton Bay SPA and represents the first stage of this process (Screening).

Step 1:
Provide a description of the plan and other plans and projects that, in combination, have the potential to have significant effects on Natura 2000 sites within the potential impact zone;

Step 2:
Identify Natura 2000 sites which may be impacted by the plan, and compile information on their qualifying interests and conservation objectives;

Step 3:
Determine whether the plan needs to be screened for potential impacts on Natura 2000 sites;

Step 4:
Carry out an assessment of likely effects – direct, indirect and cumulative – undertaken on the basis of available information as a desk study or field survey or primary research as necessary;

Step 5:
Assess the significance of any such effects on the Natura 2000 sites within the impact zone.

1.4 The assessment has been prepared in accordance with the following guidance:

European Commission (2000) Managing Natura 2000 sites: the provisions of Article 6 of the Habitats Dreictive 92/43/EEC.

European Commission (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habtiats Directive 92/43/EEC.

Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Environment, Heritage and Local Government, 2009.

2 Appropriate Assessment Screening Matrix

2.1 Description of project	
Location	Garryvoe, Ladysbridge, Castlemartyr, Cork. (See A1_Map1 of the application).
Description of the key components of the project	Garryvoe Septic Tank was built in the 1960s. The system is comprised of the following; • Inlet • Septic TankStorm Overflow Chamber • Dilution Chamber • Outlet On average approximately 105m^3/day is discharged from the septic tank into Ballycotton Bay.
Distance from designated sites in potential impact zone*	The outfall is located within the Ballycotton Bay SPA

2.2 Description of the Natura 2000 sites within the potential impact zone[1]	
Name	Ballycotton Bay SPA
Site Code	004022
Site Description	Situated on the south coast of Co. Cork, Ballycotton Bay is an east-facing coastal complex, which stretches northwards from Ballycotton to Ballynamona, a distance of c. 2 km. The site comprises two sheltered inlets which receive the flows of several small rivers. The southern inlet had formerly been lagoonal (Ballycotton Lake) but breaching of the shingle barrier in recent times has resulted in the area reverting to an estuarine system. The principal habitat within the site is inter-tidal sand and mudflats. These are mostly well-exposed and the sediments are predominantly firm sands. In the more sheltered conditions of the inlets, sediments contain a higher silt fraction. The inter-tidal flats provide the main feeding habitat for the wintering birds. Sandy beaches are well represented. Salt marshes fringe the flats in the sheltered inlets and these provide high tides roosts. A small area of shallow marine water is also included. More information on the Ballycotton Bay SPA is contained **Appendix 1** of this document. Bird Count data for 1999-2004 and 2005-2010 have been included in **Appendix 2** of this Document.
Qualifying Interests of Ballycotton Bay SPA.	Ballycotton Bay supports an excellent diversity of wintering waterfowl species, and has nationally important populations of nine species as follows: Teal, Ringed Plover, Golden Plover, Grey Plover, Lapwing, Sanderling, Bar-tailed Godwit, Curlew and Turnstone. While relatively small in area, Ballycotton Bay supports an excellent diversity of wintering waterfowl and has nationally important populations of nine species, of which two, Golden Plover and Bar-tailed Godwit, are listed on Annex I of the E.U. Birds Directive. Bird Count data for 1999-2004 and 2005-2010 have been included in **Appendix 2** of this Document.
Other Notable Features of Ballycotton Bay SPA	The shingle beach is mobile and is influenced by storms, which create open conditions that favour a particular suite of species. Species found here include Grass-leaved Orache (Atriplex littoralis), Black Mustard (Brassica nigra), Sand

[1] Natura 2000 sites within the potential impact zone of the proposed development have been identified in accordance with guidance provided in the NPWS circular L8/08.

	Couch (Elymus farctus) and Lyme-grass (Leymus arenarius). Also growing on the shingle beach is Sea-kale (Crambe maritima), a rare species that is listed in the Red Data Book. Other species which occur in important numbers, and at times exceed the threshold for national importance, include Shelduck, Wigeon, Mallard, Oystercatcher, Dunlin, Black-tailed Godwit, Redshank and Greenshank. The population of Golden Plover is of particular note as it represents 2.8% of the national total, while the Grey Plover and Lapwing populations each represent 2.5% of their respective national totals. Ballycotton Bay was formerly of importance for Bewick's Swan but the birds have abandoned the site since the reversion of the lagoonal habitat to estuarine conditions. The site is also important for wintering gulls, especially Lesser Blackbacked Gulls in autumn and early winter. Common Gull and Great Black-backed Gull are well represented in winter. Bird Count data for 1999-2004 and 2005-2010 have been included in **Appendix 2** of this Document.
Conservation Objectives	To avoid deterioration of the habitats of the qualifying species and species of special conservation interest, or significant disturbance to these species, thus ensuring that the integrity of the site is maintained. To ensure for the qualifying species and species of special conservation interest that the following are maintained in the long-term: o the population of the species as a viable component of the site; o the distribution and extent of habitats supporting the species; o the structure, function and supporting processes of habitats supporting the species; *Source – National Parks and Wildlife Service*

2.3 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.	**Discharge from Ballycotton Septic Tank:** Wastewater collected in the village of Garryvoe discharges via a septic tank into the Ballycotton Bay SPA. The discharges consists of minimally treated effluent from the Garryvoe Septic Tank. **Other Discharges:** Waste water collected in the village of Ballycotton is discharged into Ballycotton Bay, close to the SPA. Wastewater collected in the village of Garryvoe discharges via a septic tank into the Ballycotton Bay SPA. Wastewater collected in the village of Shanagarry discharges via a Private WWTP into the Ballycotton Bay SPA.
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 taking into account the following: ○ 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 ○ Other.	Discharges could give rise to elevated nutrients entering Ballycotton Bay SPA. Increased nutrient levels may impact on the ecology of an area by changing the composition of floral communities and reducing the ability of less robust plants to survive. Increased nutrient levels may also result in increasing the invertebrate populations in the estuary, thereby increasing bird population levels. However the potential for the treatment plant discharge to result in elevated nutrients within the harbour is reduced by two main factors: 1. From the limited monitoring available there is no deterioration in water quality in Ballycotton Bay SPA from the discharge. 2. The effluent enters Ballycotton Bay SPA, which is a large and well exchanged body of water with unlimited dilution capacity. **1 No deterioration in water quality in Ballycotton Bay SPA** According to the ambient monitoring already carried out as part of the WWDL application process for Ballycotton, there is no deterioration in water quality associated with the Ballycotton and other discharges. **2 Effluent discharges into Ballycotton Bay SPA** The treated effluent enters the Ballycotton Bay SPA at its southern end. Ballycotton Bay is a large and well exchanged body of water with unlimited dilution capacity. This means that the discharge is properly diluted within the SPA.
Describe any likely changes to the site arising as a result of:	**Reduction in habitat area:** The effluent is discharging to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on habitats within

○ Reduction in habitat area ○ Disturbance to key species ○ Habitat or species fragmentation ○ Reduction in species density ○ Changes in key indicators of conservation value (water quality etc) ○ Climate Change	Ballycotton Bay SPA arising from the operation of this facility. **Disturbance to key species:** The operation of the facility does not cause any disturbance to species within the SPA. **Habitat or species fragmentation:** No habitat fragmentation has been caused as a result of the operation of this facility. **Reduction in species density:** The effluent is discharging to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on species for which the SPA is designated. **Changes in key indicators of conservation value eg water quality:** While there is no ongoing monitoring of water quality for Ballycotton Bay, some sampling and testing were done and submitted as part of the Wastewater Licence Application for Ballycotton. This testing, while insufficient for a complete analysis indicates that there is no deterioration in water quality associated with the Ballycotton and other discharges.
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:** The structure of the SPA is not impacted by the operation of this facility. **Interference with key relationships that define the function of the site:** The function of the SPA is not impacted by the operation of this facility.
Describe from the above those elements of the project of 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.	No significant impacts are predicted.

3. Finding of No Significant Effects Report Matrix

3.1 Details	
Name of project or plan	Garryvoe
Name and location of Natura 2000 site	Ballycotton Bay Special protection Area
Description of the project or plan	Ballycotton Septic Tank was built in the 1960s. The system is comprised of the following; • Inlet • Septic Tank • Dilution Chamber • Outlet On average approximately 105m^3/day is discharged from the septic tank into Ballycotton Bay.
Is the project or plan directly connected with or necessary to the management of the site (provide details)?	No

3.2 The assessment of significance of effects	
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 Site.	Discharges from Garryvoe either alone or in combination with discharges from other sources could give rise to elevated nutrients entering Ballycotton Bay. Increased nutrient levels may impact on the ecology of an area by changing the composition of floral communities and reducing the ability of less robust plants to survive. Increased nutrient levels may also result in increasing the invertebrate populations in the estuary, thereby increasing bird population levels.
Explain why these effects are not considered significant.	The effluent is discharging to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on species for which the SPA is designated.
List of agencies consulted: provide contact name and telephone or email address	National Parks and Wildlife Service – Natureconservation@environ.ie, cyril.saich@environ.ie BirdWatch Ireland – Data request.

Response to consultation	Draft Conservation Objectives were sent from NPWS.

Data collected to carry out the assessment			
Who carried out the assessment	**Sources of data**	**Level of assessment completed**	**Where can the full results of the assessment be accessed and viewed**
Colm Brennan, Cork County Council	IWebs Bird Data supplied by BirdWatch Ireland; Water Quality Monitoring Data CCC; Ecological Report for the proposed Shanagarry, Garryvoe, Ballycotton Sewage Scheme, Co. Cork. Prepared by Limosa Environmental. (Submitted as part of the Licence application).	Desktop review of cited data.	This report.

Question 2 **Provide details regarding the upgrade of the plant. Your response should include**

(a) Clarification whether the new plant is operational. Where the new plant is not operational provide a timeframe within which the waste water treatment plant will be fully operational.

(b) Where the new upgrade plant is not operational provide a description of the current treatment process and the proposed treatment process.

The Shannagarry/Garryvoe/Ballycotton Sewerage Scheme is included in the Water Services Investment Programme 2010-2012, and is approved to complete the planning stage. This includes initial outline design, planning approval and the Preliminary report. Therefore the plant is not operational and there is no programme or timeframe for completion available.

The current treatment process is provided by the existing septic tank. This has been described in Section C.1 of the original application. This is included in **Appendix 3** below. (Highlighted Section)

The proposed treatment process is described in Section A of the original application. This is included in **Appendix 4** below. (Highlighted Section) The relevant sections of the Design Report and the Part VIII planning application have also been included in **Appendix 4**. Thus far, these are the only sources of information on the proposed WWTP.

APPENDIX 1

SITE SYNOPSIS

SITE NAME: BALLYCOTTON BAY SPA

SITE CODE: 004022

Situated on the south coast of Co. Cork, Ballycotton Bay is an east-facing coastal complex, which stretches northwards from Ballycotton to Ballynamona, a distance of *c.* 2 km. The site comprises two sheltered inlets which receive the flows of several small rivers. The southern inlet had formerly been lagoonal (Ballycotton Lake) but breaching of the shingle barrier in recent times has resulted in the area reverting to an estuarine system.

The principal habitat within the site is inter-tidal sand and mudflats. These are mostly well-exposed and the sediments are predominantly firm sands. In the more sheltered conditions of the inlets, sediments contain a higher silt fraction. The inter-tidal flats provide the main feeding habitat for the wintering birds. Sandy beaches are well represented. The shingle beach is mobile and is influenced by storms, which create open conditions that favour a particular suite of species. Species found here include Grass-leaved Orache (*Atriplex littoralis*), Black Mustard (*Brassica nigra*), Sand Couch (*Elymus farctus*) and Lyme-grass (*Leymus arenarius*). Also growing on the shingle beach is Sea-kale (*Crambe maritima*), a rare species that is listed in the Red Data Book. Salt marshes fringe the flats in the sheltered inlets and these provide high tides roosts. A small area of shallow marine water is also included.

Ballycotton Bay supports an excellent diversity of wintering waterfowl species, and has nationally important populations of nine species as follows (all figures are average peaks for the 5 winters 1995/96-1999/00): Teal (1,296), Ringed Plover (248), Golden Plover (4,284), Grey Plover (187), Lapwing (4,371), Sanderling (79), Bar-tailed Godwit (261), Curlew (1,254) and Turnstone (288). Other species which occur in important numbers, and at times exceed the threshold for national importance, include Shelduck (137), Wigeon (757), Mallard (366), Oystercatcher (362), Dunlin (812), Black-tailed Godwit (168), Redshank (149) and Greenshank (17). The population of Golden Plover is of particular note as it represents 2.8% of the national total, while the Grey Plover and Lapwing populations each represent 2.5% of their respective national totals. Ballycotton Bay was formerly of importance for Bewick's Swan but the birds have abandoned the site since the reversion of the lagoonal habitat to estuarine conditions. The site is also important for wintering gulls, especially Lesser Blackbacked Gulls (1,606) in autumn and early winter. Common Gull (310) and Great Black-backed Gull (324) are well represented in winter.

The site is a well-known location for passage waders, especially in autumn. Species such as Ruff, Little Stint, Curlew Sandpiper, Green Sandpiper and Spotted Redshank occur annually though in variable numbers. Small numbers of Ruff may also be seen in late winter and spring. Rarer waders, such as Wood Sandpiper and Pectoral Sandpiper, have also been recorded.

While relatively small in area, Ballycotton Bay supports an excellent diversity of wintering waterfowl and has nationally important populations of nine species, of which two, Golden Plover and Bar-tailed Godwit, are listed on Annex I of the E.U. Birds Directive. Bird populations have been well-monitored in recent years.
6.10.2004

APPENDIX 2

I-WeBS

Ballycotton Bay

Species name	1% national	1% international	1999/00	2000/01	2001/02	2002/03	2003/04	Mean	Peak
Red-throated Diver	20	10,000	6	1				1	6
Great Northern Diver	20	50	1				1	0	1
Little Grebe	25	3,400	2					0	2
Great Crested Grebe	55	4,800	1				1	0	1
Cormorant	130	1,200	12	17	9	11	28	15	28
Grey Heron	30	2,700	15	13	9	10	15	12	15
Little Egret	20	1,300	2	3	4	3	7	4	7
Mute Swan	110	110					2	0	2
Pink-footed Goose			1					0	1
Greenland White-fronted Goose	110	330	1					0	1
Canada Goose			34	15	20	6	16	19	34
Barnacle Goose	90	540		1				0	1
Light-bellied Brent Goose	200	200	62	46	26	15	48	39	62
Shelduck	150	3,000	149	61	47	52	91	80	149
Wigeon	820	15,000	454	380	518	735	568	535	735
American Wigeon						1		0	1
Gadwall	20	600	2	6	2			2	6
Teal	450	4,000	747	758	512	726	509	650	758
Green-winged Teal			1					0	1
Mallard	380	20,000	161	85	159	213	218	167	218
Pintail	20	600				4	2	1	4
Shoveler	25	400	1			20		4	20
Ring-necked Duck						1		0	1
Scaup	45	3,100	5					1	5
Moorhen		20,000	5	2	2	2	6	3	6
Water Rail			1		1	1		1	1
Oystercatcher	680	10,200	164	164	230	267	251	219	267
Ringed Plover	150	730	87	134	105	82	78	97	134
American Golden Plover				1				0	1
Golden Plover	1,500	9,300	123	930	1,850	2,600	2,200	1,481	2,600
Grey Plover	65	2,500	84	95	93	129	104	101	129
Lapwing	1,900	20,000	2,120	1,839	1,266	2,240	1,789	1,971	2,240
Knot	190	4,500	2	6		35	16	12	35
Sanderling	66	1,200	82	114	73	61	92	80	114
Little Stint				1				0	1
Baird's Sandpiper								0	1
Curlew Sandpiper			2	10				2	10
Dunlin	880	13,300	363	285	527	475	450	420	527
Buff-breasted Sandpiper				1				0	1
Ruff		10,000	3	8	1	2		3	8
Jack Snipe					1			0	1
Snipe		20,000	75	27	57	57	83	60	83
Black-tailed Godwit	140	350	171	158	188	243	207	193	243
Bar-tailed Godwit	150	1,200	123	99	96	158	101	115	158
Whimbrel			1					0	1
Curlew	530	4,200	744	494	586	676	540	608	744
Spotted Redshank		1,000	2	1	2	1	1	1	2
Redshank	310	1,900	180	154	126	133	214	162	214
Greenshank	20	3,100	13	8	21	18	14	15	21
Green Sandpiper					1			0	1
Turnstone	120	1,000	116	67	126	148	147	126	148
Mediterranean Gull			1		1	1		1	1
Black-headed Gull		20,000	370	848	643	1,033	1,000	779	1,033
Common Gull		15,000	551	2,205	1,300	1,630	364	1,210	2,205
Lesser Black-backed Gull		4,500	963	2,162	1,563	1,352	1,313	1,475	2,162

The counts presented in the table refer to the peak counts of species in each I-WeBS season.
Site peak and mean are calculated as the peak and mean of peak counts respectively over the five seasons specified.
Blank columns indicate seasons for which no data are available, while blank cells within columns which contain positive values for one or more species constitute zero for those species.

I-WeBS

Ballycotton Shanagarry

Species	1% National	1% International	2004/05	2005/06	2006/07	2007/08	2008/09	Mean	Peak
Kittiwake					2			1	2
Canada Goose							12	3	12
Light-bellied Brent Goose		260	38		114	28	162	86	162
Ruddy Shelduck					1			0	1
Shelduck	150	3,000	76		37	38	43	49	76
Wigeon	820	15,000	643		515	542	501	550	643
Gadwall	20	600	2				1	1	2
Teal	450	5,000	454		522	363	417	439	522
Mallard	380	20,000	131		133	142	95	125	142
Pintail	20	600			1			0	1
Shoveler	25	400			3	1		1	3
Eider	30	12,830					1	0	1
Red-breasted Merganser	35	1,700			1			0	1
Red-throated Diver	20	3,000				1	2	1	2
Great Northern Diver		50	2		10	4	1	4	10
Little Grebe	25	4,000					1	0	1
Great Crested Grebe	55	3,600			2	1	3	2	3
Cormorant	140	1,200	18		30	16	16	20	30
Night Heron			1					0	1
Little Egret		1,300	6		17	14	22	15	22
Grey Heron	30	2,700	13		19	6	12	13	19
Water Rail						2		1	2
Moorhen	20		2			3	4	2	4
Oystercatcher	680	10,200	191		288	307	211	249	307
Ringed Plover	150	730	65		140	67	112	96	140
Golden Plover	1,700	9,300	2,450		2,550	3,450	5,100	3,388	5,100
Grey Plover	65	2,500	57		93	97	55	76	97
Lapwing	2,100	20,000	1,178		870	2,208	1,104	1,340	2,208
Knot	190	4,500	78		29	34	43	46	78
Sanderling	65	1,200	96		99	37	63	74	99
Little Stint					1			0	1
Pectoral Sandpiper							1	0	1
Curlew Sandpiper					1		6	2	6
Dunlin	880	13,300	327		380	194	132	258	380
Buff-breasted Sandpiper							1	0	1
Ruff		12,500			10	10	10	8	10
Jack Snipe			2			1		1	2
Snipe		20,000	58		104	62	50	69	104
Black-tailed Godwit	140	470	191		217	145	230	196	230
Bar-tailed Godwit	160	1,200	85		129	88	31	83	129
Whimbrel		2,000			1	1	1	1	1
Curlew	550	8,500	530		404	311	414	415	530
Spotted Redshank		900	2		1	2		1	2
Greenshank	20	2,300	13		15	13	13	14	15
Redshank	310	3,900	125		116	80	83	101	125
Turnstone	120	1,500	113		153	123	78	117	153
Mediterranean Gull			1		2	10	1	4	10
Black-headed Gull		20,000	1,319		226	628	1,620	948	1,620
Common Gull		16,000	603		456	1,077	496	658	1,077
Lesser Black-backed Gull		4,500	509		151	1,200	6,697	2,139	6,697
Herring Gull		13,000	132		209	709	365	354	709
Iceland Gull					1			0	1
Great Black-backed Gull		4,800	330		108	405	150	248	405
Sandwich Tern			108			2	10	30	108
Kingfisher						1	2	1	2

The counts presented in the table refer to the peak counts of species in each I-WeBS season.
Site peak and mean are calculated as the peak and mean of peak counts respectively over the seasons specified. Blank cells within columns which contain positive values for one or more species constitute zero for those species.

APPENDIX 3

SECTION C: INFRASTRUCTURE & OPERATION

Advice on completing this section is provided in the accompanying Guidance Note.

C.1 Operational Information Requirements

Provide a description of the plant, process and design capacity for the areas of the waste water works where discharges occur, to include a copy of such plans, drawings or maps (site plans and location maps, process flow diagrams) and such other particulars, reports and supporting documentation as are necessary to describe all aspects of the area of the waste water works discharging to the aquatic environment. Maps and drawings must be no larger than A3 size.

C.1 Operational Information Requirements

Shanagarry and the coastal resort of Garryvoe are situated approximately 14 kilometres southeast of Midleton, on the R-632-55 regional route connecting Shanagarry and Castlemartyr. In the overall strategy of this Local Area Plan, Shanagarry / Garryvoe is designated as a Village and important holiday resort within East Cork. Garryvoe has experienced significant development in recent years.

The sewage network in Garryvoe generally follows the path of the R-632-55. It runs from East to West, following the coastline and also from North to South. Waste water flows by gravity to the septic tank, which is underneath the public toilets located beside the public car park for the Beach. It then discharges into Ballycotton Bay. The network is a combined sewer system.

Garryvoe septic tank is currently operated by Cork County Council.

The system is comprised of the following;

- Inlet
- Septic Tank
- Dilution Chamber
- Outlet

Primary Treatment

Under normal operating conditions all of the influent enters the septic tank, which has a capacity of 47m^3. The capacity in terms of PE has been estimated at 250. Here the heavy solids settle to the bottom of the tank and are stored for collection. The effluent then flows into the dilution chamber. Here it is mixed with fresh water from the adjacent Ballylongane River and then it falls by gravity to the primary discharge point. The septic tank provides only preliminary treatment. The passage of sewage through a septic tank helps in the removal of suspended solids but there is very little biological activity and the removal of BOD is not significant.

The septic tank was built in the 1960s with a capacity of 250PE. This is much less than the current PE of 466. The septic tank provides only preliminary treatment. The passage of sewage through a septic tank helps in the removal of suspended solids but there is very little biological activity and the removal of BOD is not significant. The septic tank is badly overloaded and is not operating efficiently. It is highly unlikely that the effluent meets the required standard.

APPENDIX 4

SECTION A: NON-TECHNICAL SUMMARY

Advice on completing this section is provided in the accompanying Guidance Note.

A non-technical summary of the application is to be included here. The summary should identify all environmental impacts of significance associated with the discharge of waste water associated with the waste water works. This description should also indicate, where applicable, the hours during which the waste water works is supervised or manned and days per week of this supervision.

The following information must be included in the non-technical summary:

A description of:

- the waste water works and the activities carried out therein,
- the sources of emissions from the waste water works,
- the nature and quantities of foreseeable emissions from the waste water works into the receiving aqueous environment as well as identification of significant effects of the emissions on the environment,
- the proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the waste water works,
- further measures planned to comply with the general principle of the basic obligations of the operator, i.e., that no significant pollution is caused;
- measures planned to monitor emissions into the environment.

Supporting information should form **Attachment Nº A.1**

Non-Technical Summary

Shanagarry and the coastal resort of Garryvoe are situated approximately 14 kilometres southeast of Midleton, on the R-632-55 regional route connecting Shanagarry and Castlemartyr. In the overall strategy of this Local Area Plan, Shanagarry / Garryvoe is designated as a Village and important holiday resort within East Cork. Garryvoe has experienced significant development in recent years.

The Waste Water Works and the activities carried out therein.

The sewage network in Garryvoe generally follows the path of the R-632-55. It runs from East to West, following the coastline and also from North to South. Waste water flows by gravity to the septic tank, which is underneath the public toilets located beside the public car park for the Beach. It then discharges into Ballycotton Bay. The network is a combined sewer system.

Garryvoe septic tank is currently operated by Cork County Council.

The system is comprised of the following;

- Inlet
- Septic Tank
- Dilution Chamber
- Outlet

When the tank was built in the 1960s the PE contributing to it was far less than at present. The current PE contributing to the septic tank is approximately 466. The

passage of sewage through a septic tank helps in the removal of suspended solids but there is very little biological activity and the removal of BOD is not significant.

The septic tank currently does not have any sampling regime in place.

Garryvoe Village is included in the Shanagarry/Garryvoe/Ballycotton Sewerage Scheme, which is included in the Water Services Investment Programme 2007-2009. Cork County Council is currently awaiting departmental approval for funding to proceed with the Ballycotton element of this Scheme. This element is to be designed and built to allow for expansion in the future. It is proposed to procure the treatment plant under a design, build, operate contract. The operator will be obliged to meet the standards set out in the Urban Waste Water Treatment Regulations and it is likely that an appropriate sampling regime will be put in place.

The sources of emissions from the waste water works.

The population load for the Garryvoe agglomeration arises from the following sources:

- Domestic Population
- Commercial Premises
- Infiltration

The sewage from all non-domestic premises is collected via the existing sewer network and is treated in conjunction with the domestic waste at the Septic tank. Garryvoe septic tank does not receive any other sludge imported from other municipal waste water sources or septic tanks.

Other potential emissions from the waste water treatment plant include;

- Odour generated from the treatment process – No recorded issues to date.
- Noise pollution – No recorded issues to date.

The nature and quantities of foreseeable emissions from the waste water works into the receiving aqueous environment as well as identification of significant effects of the emissions on the environment.

The final discharge is to Ballycotton Bay which is located to the South of the village. The average outflow from the septic tank is in the order of 105m^3, which is equivalent to a PE of 466. The proposed plant will be initially designed to cater for a PE of 1200, with an allowance for future expansion up to 3200 PE to accommodate the treatment of wastewater from Shanagarry and Garryvoe.

The proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the waste water works.

Technology

The new WWTP will include the following elements;

- Grit Removal and Screening
- Storm Holding Tank
- Inlet Flow Measurement Chamber
- Extended Aeration Tanks
- Clarifier
- Sludge Picket-Fence Thickener
- Final Effluent Flow Measurement Chamber
- UV Channel

- Control House
- Odour Control Units

Techniques

The new WWTP shall be operated and maintained in accordance with best practice and any performance requirements stipulated in the Employer's Requirements.

Further measures planned to comply with the general principle of the basic obligations of the operator, i.e., that no significant pollution is caused.

The complete process will be upgraded with the construction of the new WWTP. The treatment capacity, the discharge quality and control systems will be improved to ensure that no significant pollution is caused.

It is likely that under the DBO contract for the new WWTP, a Performance Management system will be required. Such a system would provide a uniform approach to dealing with management issues, including procedures for dealing with plant operation and in particular for dealing with emergencies or failure to meet treated effluent standards.

Failure to meet the specified treated effluent standards may result in financial penalties to the operating contractor. As a result, the risk of environmental pollution from the treatment plant should be reduced.

Measures planned to monitor emissions into the environment.

No sampling is currently carried out on the influent or effluent. It is likely that under the Employers Requirements for Operation and Maintenance the Contractor will be obliged to implement in full the requirements of a Performance Management System. In providing this service, the Contractor would monitor the waste water treatment plant assets and operation, which would include undertaking sampling, monitoring and analysis of the wastewater and Sludge. County Council Environmental Department and the EPA monitor Water Quality in Garryvoe Beach. Water quality in Ballycotton Bay is not monitored by the EPA. Youghal Harbour is the nearest coastal water body monitored by the EPA.

9 BALLYCOTTON

9.1 Existing Situation / Proposal

A Preliminary Report was prepared by WYG in 2006 for a sewerage scheme covering the Shanagarry, Garryvoe, Ballycotton coastal area. The Report recommended:

- A new collection system comprising gravity sewers, pumping stations and rising mains for Shanagarry
- An extension of the existing collection system, and new pumping stations and associated rising mains for Garryvoe.
- Extensions of the existing collection system, replacement of existing sewers and new pumping stations and associated rising mains to be provided in Ballycotton
- Provision of stormwater trunk sewers in Ballycotton
- A new treatment plant to be constructed at Ballycotton to treat the combined flows from Shanagarry, Garryvoe and Ballycotton, with a marine outfall to Ballycotton Bay.

To cater for the high seasonal variation in load, the treatment plant was recommended to be at least two-stream, with a design capacity of 3,200 PE and a 25/35 treated effluent standard. Dilution/dispersion at the outfall was calculated to be such as to not require disinfection but retrofitting would be allowed for in the design of the plant.

The implementation of the proposals for the treatment plant and the sea outfall at Ballycotton are now incorporated into this Project.

The proposal to lay a treated effluent rising main from Castlemartyr to Balltycotton, passing through Shanagarry, has changed the economics which led to the proposed centralised treatment and disposal at Ballycotton. An economic analysis indicates (see Section 6.4) that local treatment at Ballycotton and Shanagarry/Garryvoe and pumping of the treated effluent from the latter to Ballycotton is now a more economic solution. This option needs to be considered in more detail to ensure that it is the best option on environmental and technical grounds.

It is therefore proposed that the treatment plant at Ballycotton has a capacity of 1,200 PE, for expansion in the future. The future capacity of the plant will be dependent on the final adopted solution for Shanagarry and Garryvoe. An indicative layout for the plant is shown on Figure 10 in Appendix 7. The layout incorporates a UV channel which will cater for the discharge from Castlemartyr /Ladysbridge, Cloyne/Saleen as well as Shanagarry, Garryvoe and Ballycotton.

The proposal includes the installation of:

- Grit removal and screening
- A Storm Holding Tank
- An Inlet flow measurement chamber
- Extended aeration tanks 2 x 600PE
- A Clarifier (6m dia.)
- Sludge picket-fence thickener
- Final effluent flow measurement chamber
- A UV Channel (76 l/s)
- Control House
- Odour control units – 2 at different locations

The proposed new marine outfall for Ballycotton extends 330m into Ballycotton Bay. It was designed to cater for the combined effluent from Ballycotton, Shanagarry and Garryvoe with a peak/summer DWF of 6.6l/s (3,200 PE). Peak flow was taken as 3 DWF or 20l/s. Treated effluent from Cloyne and Castlemartyr will be combined with that from Ballycotton at the outlet from the treatment plant, for discharge through the outfall. The 350mm diameter pipeline is hydraulically adequate.

The total flow now to be discharged through the proposed outfall at Ballycotton is 76 l/s (3 x DWF). The 350mm n.b. diameter pipeline is hydraulically adequate to take this flow.

An assessment of the dilution and dispersion study for the outfall was carried out. This indicates that the proposed outfall discharge point, c.300m offshore, is capable of handling the increased discharge and will maintain bathing water quality in the Bay and blue flag standard at Garryvoe. It is however recommended that the outfall be remodelled and a U.V. channel provided at the Treatment Plant to facilitate retrofitting of disinfection if required. Costs for both are included in the Estimate.

A UV channel at Ballycotton to treat the combined effluent for all seven centres is therefore recommended.

The recommended treated effluent standards for the Ballycotton plant are in accordance with the Urban Waste Water Treatment Regulations 2001. These are set out in the following table:

Table 9.1 Ballycotton Effluent Monitoring

	Unit	Concentration	Minimum percentage of reduction
BOD_5	mg/l O_2	25	70 – 90
COD	mg/l O_2	125	75
SS	mg/l	35	90

9.2 Collection System

The location of the proposed treatment plant is on elevated ground to the west of the village. The effectiveness of the plant is thus totally contingent on the upgrading and remodelling of the existing collection system, including the construction of three pumping stations. This upgrading and remodelling, as proposed in the WYG Preliminary Report is shown in Figure 11, Appendix 7 and the cost thereof has been included in the Estimate.

In the Preliminary Report, it was proposed that three surface water sewers be laid in conjunction with the upgrading/remodelling of the existing collection system. They were specifically to service lands zoned for development in the Local Area Development Plan. Due to current economic circumstances, these have not been included in the Project and will only proceed when the need arises.

9.3 Statutory Processes

The following outlines the current status for the site regarding requirements / legislation:

- Land acquisition and wayleaves – in progress for the treatment plant site and 3 No. pump station sites.
- Part 8 planning is required for the 4 sites.
- Foreshore Licence - A foreshore licence application has been lodged for the outfall.
- A Waste Discharge Licence will be required for the outfall and the storm overflows from the pumping stations.

CORK COUNTY COUNCIL

Part VIII Planning Application for:

The construction of a Waste Water Treatment Plant and associated marine outfall at Ballycotton, Co Cork.

Description of the Works

Cork County Council proposes to upgrade the Ballycotton Sewerage Scheme, including the construction of a waste water treatment plant and an associated sea outfall, to serve existing and future residential and commercial development in Ballycotton.

(a) Waste Water Treatment Plant

The treatment plant is to be located to the west of the village, in the townland of Ballybraher. The plant is designed to initially provide treatment for a population equivalent (PE) of 1,200, with an allowance for future expansion up to 3,200 PE to accommodate the treatment of wastewater from Shanagarry and Garryvoe.

It is proposed to procure the treatment plant under a design, build, operate contract. The layout shown on the drawings is therefore indicative only and the final layout will be determined by the design-build-operate contractor's design. The plant design will include for coarse screening, grit removal, secondary treatment (extended aeration) and clarification. Treatment facilities for sludge produced on site will also be provided. The design-build-operate contractor's proposal will be no larger in plan or height than the details shown on the drawings. The maximum height of the control building will be 4.5m above finished ground level and all other structures 3.0m. above finished ground level.

The effluent will be treated to meet the standards set out in the Urban Waste Water Treatment Regulations as follows:

BOD_5	25 mg/l
COD	125 mg/l
Suspended Solids	35 mg/l

The following boundary conditions will apply to the operation of the WWTP:

- Noise limit :- 55dBA (day time); 45dBA (night time)
- Odour limit :- $3ou_E$ / m^3 on a 98 percentile basis.

(b) Marine Outfall

To dispose of the treated effluent from Treatment Plant, it is also proposed to construct a new marine outfall. The Outfall will be a 350 mm dia. pipeline, approximately 1.7 km. in length, running from the treatment plant site, through the village, to discharge into Ballycotton Bay, 300m. offshore from Cow's Slip.

A Foreshore Licence Application has been lodged for the marine section of the outfall.

Drawings

The full list of drawings relating to this planning proposal is as follows:

Overall Scheme Layout	C006916-C-5101
WWTP Site Location Map	C006916-C-5102
Indicative Site Layout	C006916-C-5103
Site Sectional Elevations	C006916-C-5104
Control Building & WWTP Site Details	C006916-C-5105
Plan & Section of Proposed Outfall	C006916-C-5512