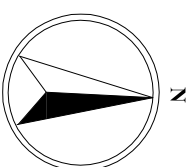


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**AGGLOMERATION
BOUNDARY**



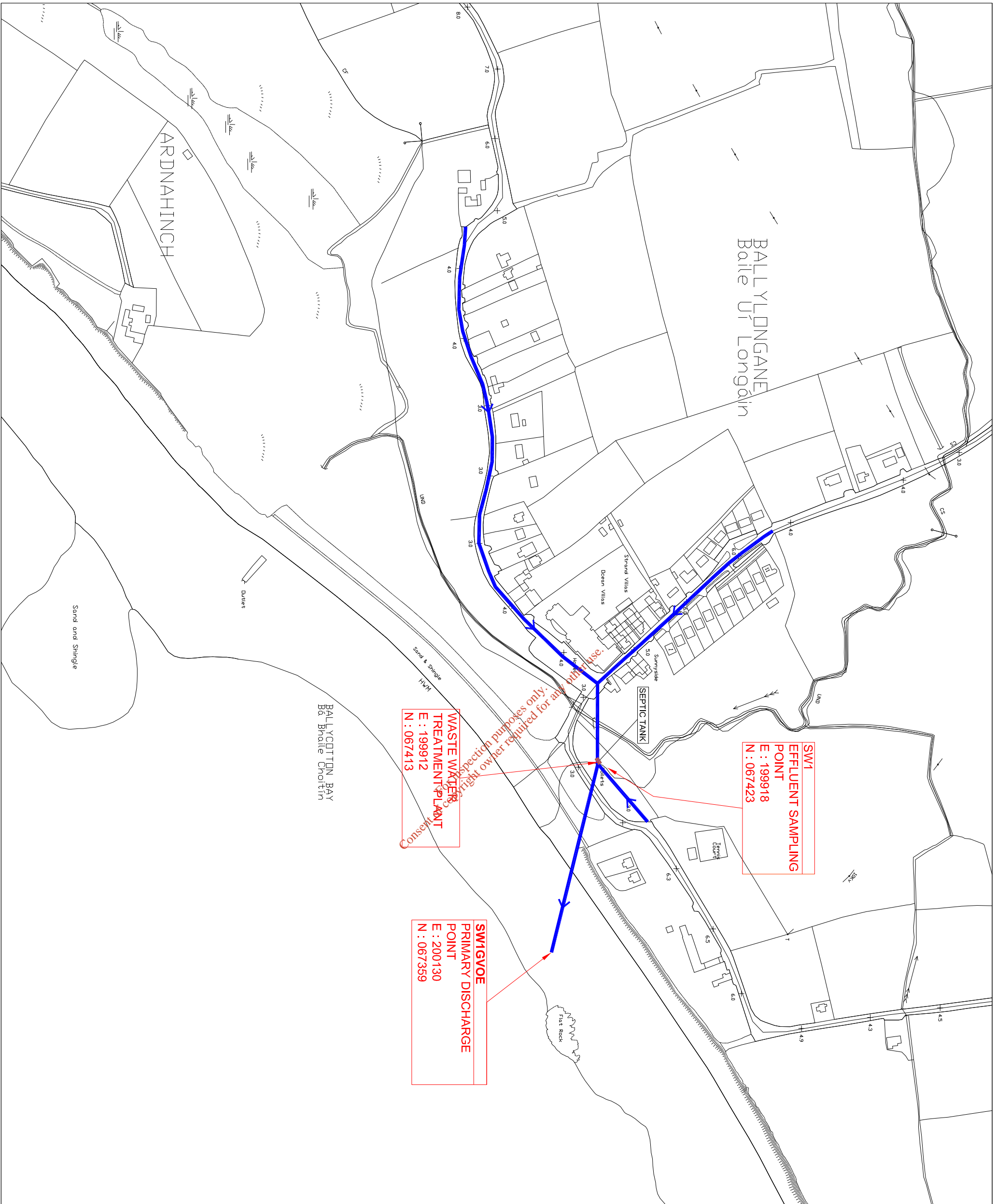
CORK COUNTY COUNCIL
SOUTHERN DIVISION
Noel O'Keefe, B.E. Chief Executive
County Engineer
County Hill, Cork.
Patricia Power,
Director of Services,
Area Operations South

Project: **GARRYVOE WWTP**
WASTE WATER
DISCHARGE LICENCE APPLICATION

Title: Application Form
Attachment B1_Map3
Agglomeration Boundary Served By
Waste Water Treatment Works

Designed: ER	Checked: MH	Scale: 1:5,000 @ A3	Drawing No: B1_Map3
Drawn: MM	Approved: MH	Date: Nov 09	Status: 0
File Path:			Rev: 0

Rev	Date	By	Description



Consent application for discharge of effluent into the sea.
 Copyright owner required for application.

SW1
EFFLUENT SAMPLING POINT
 E : 199918
 N : 067423

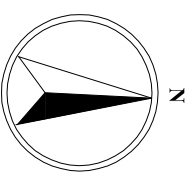
SW1GVOE
PRIMARY DISCHARGE POINT
 E : 200130
 N : 067359

WASTE WATER TREATMENT PLANT
 E : 199912
 N : 067413


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SEWER MAINS



Rev.	Date	By	Description

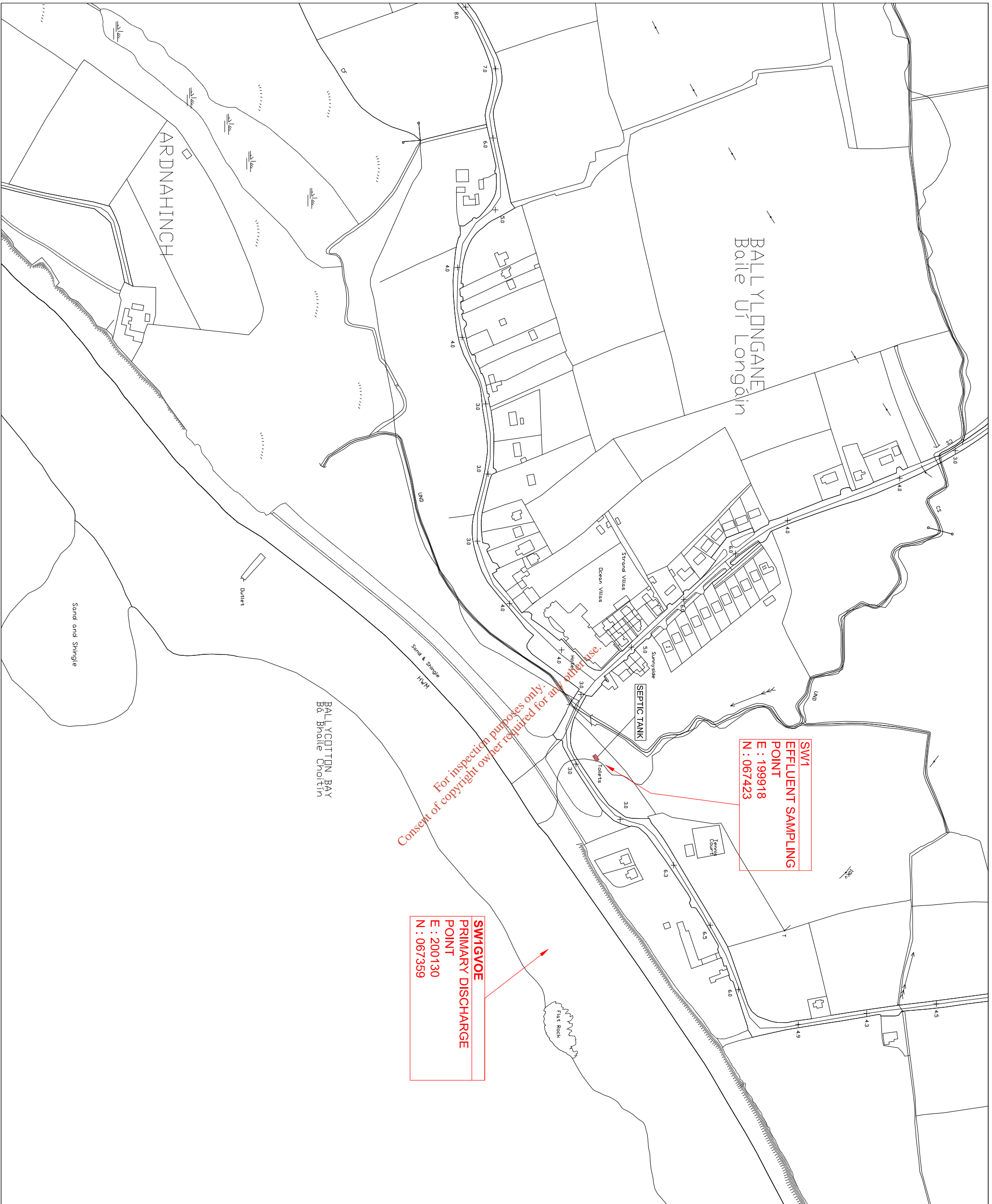


CORK COUNTY COUNCIL
SOUTHERN DIVISION
 Noel O Keefe, B.E. Chief Executive
 County Hall, Cork.
 Patricia Power, Director of Services
 Area Operations South

Project: **GARRYVOE WWTP**
WASTE WATER DISCHARGE LICENCE APPLICATION

Title: **Application Form**
 Attachment B2_Map4
 Location Plan of Waste Water Treatment Plant

Designed: ER	Checked: MH	Scale: 1:3,000 @ A3	Drawing No: B2_Map4
Drawn: MM	Approved: MH	Date: Nov 09	Status: 0
File Path:			



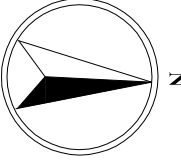
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SW1
EFFLUENT SAMPLING
POINT
E : 199918
N : 067423

SW1GVOE
PRIMARY DISCHARGE
POINT
E : 200130
N : 067359

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CORK COUNTY COUNCIL
SOUTHERN DIVISION
Niall O'Keefe, B.E. Chief Executive
 County Engineer
 County Hall, Cork.
Patricia Power,
 Director of Services,
 Area Operations South

Project: **GARRYVOE WWTP**
WASTE WATER
DISCHARGE LICENCE APPLICATION

Title: Application Form
 Attachment B3_Maps
 Location Plan of Waste Water Treatment Plant

Designed: ER	Checked: MH	Scale: 1:3,000 @ A3	Drawing No: B3_Maps5
Drawn: MM	Approved: MH	Date: Nov 09	Status: —
File Path:			Rev: 0

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 Ballycotton, 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 :- 30u_E / m³ 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

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Cork County

Water Services Investment Programme 2007 - 2009

Schemes at Construction	W/S	Est. Cost	Schemes to start 2009 contd.	W/S	Est. Cost
Cork North			Cork South		
Mitchelstown Sewerage Scheme (Nutrient Removal)	S	221,000	Ballincollig Sewerage Scheme (Upgrade) (G)	S	22,248,000
Cork South			Cork Lower Harbour Sewerage Scheme (excl. Crosshaven SS)	S	73,542,000
Ballyvourney/ Ballymakeery Sewerage Scheme	S	3,049,000	Shannagarry/ Garryvoe/ Ballycotton Sewerage Scheme	S	3,780,000
Cobh/ Midleton/ Carrigtwohill Water Supply Scheme	W	10,135,000	Youghal Sewerage Scheme	S	14,420,000
Cork Lower Harbour Sewerage Scheme (Crosshaven SS) (G)	S	4,850,000	Cork West		
Cork Water Strategy Study (G)	W	941,000	Ballydehob Sewerage Scheme	S	683,000
Kinsale Sewerage Scheme	S	20,000,000	Bantry Water Supply Scheme	W	14,935,000
Midleton Sewerage Scheme (Infiltration Reduction) (G)	S	2,078,000	Clonakilty Sewerage Scheme (Plant Capacity Increase)	S	3,677,000
		41,274,000	Courtmacsherry/ Timoleague Sewerage Scheme	S	2,472,000
Schemes to start 2007			Dunmanway Regional Water Supply Scheme Stage 1	W	12,669,000
					164,629,000
Cork North			Serviced Land Initiative		
North Cork Grouped DBO Wastewater Treatment Plant (Buttevant, Doneraile & Kilbrin)	S	5,150,000	Cork North		
Cork West			Ballycough Water Supply Scheme	W	139,000
Skibbereen Sewerage Scheme	S	20,000,000	Ballyhooley Improvement Scheme	W/S	139,000
		25,150,000	Broghill-Rathgoggin Sewerage Scheme	S	406,000
Schemes to start 2008			Bweeng Water Supply Scheme	W	115,000
Cork North			Churchtown Sewerage Scheme (incl. Water)	W/S	543,000
Mallow/ Ballyvinter Regional Water Supply Scheme (H) W		8,662,000	Clondulane Sewage Treatment Plant	S	417,000
Mallow Sewerage Scheme (H)	S	3,408,000	Freemount Sewerage Scheme	S	150,000
Cork South			Pike Road Sewerage Scheme (incl. Water)	W/S	2,080,000
Ballincollig Sewerage Scheme (Nutrient Removal) (G)	S	948,000	Rathcormac Sewerage Scheme (incl. Water)	W/S	555,000
Ballingeary Sewerage Scheme	S	1,296,000	Spa Glen Sewerage Scheme	S	736,000
Bandon Sewerage Scheme Stage 2	S	14,729,000	Uplands Fermoy Sewerage Scheme (incl. Water)	W/S	1,174,000
City Environs (CASP) Strategic Study (G)	S	153,000	Watergrasshill Water Supply Scheme (incl. Sewerage) (G)	W/S	4,151,000
Cloghroe Sewerage Scheme (Upgrade)	S	683,000	Cork South		
Coachford Water Supply Scheme	W	1,318,000	Ballincollig Sewerage Scheme (Barry's Rd Foul and Storm Drainage) (G)	S	1,164,000
Garretstown Sewerage Scheme	S	2,153,000	Belgooley, Water Supply Scheme (incl. Sewerage)	W/S	2,913,000
Inniscarra Water Treatment Plant Extension Phase 1	W	2,678,000	Blamey Water Supply Scheme (Ext. to Station Rd) (G)	W	416,000
Little Island Sewerage Scheme (G)	S	2,200,000	Carrigtwohill Sewerage Scheme (Treatment and Storm Drain) (G)	S	7,632,000
Cork West			Castlematyr Wastewater Treatment Plant Extension	S	1,200,000
Bantry Sewerage Scheme	S	7,148,000	Crookstown Sewerage Scheme (incl. Water)	W/S	1,200,000
Dunmanway Sewerage Scheme	S	2,153,000	Dripsey Water Supply Scheme (incl. Sewerage)	W/S	1,112,000
Leap/ Baltimore Water Supply Scheme	W	6,365,000	Glounthane Sewerage Scheme (G)	S	1,576,000
Schull Water Supply Scheme	W	5,253,000	Innishannon Sewerage Scheme	S	277,000
		61,137,000	Innishannon Wastewater Treatment Plant	S	694,000
Schemes to start 2009			Kerrypike Sewerage Scheme	S	832,000
Cork North			Kerrypike Water Supply Scheme	W	416,000
Banteer/Dromahane Regional Water Supply Scheme	W	1,576,000	Killeagh Wastewater Treatment Plant Extension	S	1,200,000
Conna Regional Water Supply Scheme Extension	W	2,627,000	Killeagh Water Supply Scheme (includes Sewerage)	W/S	485,000
Cork NE Water Supply Scheme	W	4,326,000	Killeens Sewerage Scheme	S	420,000
Cork NW Regional Water Supply Scheme	W	6,046,000	Kinagleary Sewerage Scheme	S	694,000
Millstreet Wastewater Treatment Plant (Upgrade)	S	1,628,000	Midleton Wastewater Treatment Plant Extension	S	4,050,000

Cork County contd.

Water Services Investment Programme 2007 - 2009

Serviced Land Initiative contd.	W/S	Est. Cost	Schemes to Advance through Planning cond.	W/S	Est. Cost
Cork South contd.			Cork South		
Mogeely, Castlemartyr & Ladysbridge Water Supply Scheme	W	2,566,000	Carrigtwohill Sewerage Scheme (G)	S	20,000,000
North Cobh Sewerage Scheme (G)	S	3,193,000	Cork Sludge Management (G)	S	14,420,000
Riverstick Water Supply Scheme (incl. Sewerage)	W/S	525,000	Cork Water Supply Scheme (Storage - Mount Emla, Ballincollig & Chetwind) (G)	W	8,500,000
Rochestown Water Supply Scheme	W	2,700,000	Inniscarra Water Treatment Plant (Sludge Treatment)(G)W		5,356,000
Saleen Sewerage Scheme	S	1,051,000	Macroom Sewerage Scheme	S	5,150,000
Youghal Water Supply Scheme	W	2,300,000	Minane Bridge Water Supply Scheme	W	1,421,000
Cork West			Cork West		
Castletownshend Sewerage Scheme	S	1,576,000	Bantry Regional Water Supply Scheme (Distribution)	W	9,455,000
		50,797,000	Cape Clear Water Supply Scheme	W	1,679,000
Rural Towns & Villages Initiative			Rural Towns & Villages Initiative		
Cork North			Cork North		
Buttevant Sewerage Scheme (Collection System)	S	2,446,000	Castletownbere Regional Water Supply Scheme	W	8,405,000
Doneraile Sewerage Scheme (Collection System)	S	1,738,000	Glengarriff Sewerage Scheme	S	2,500,000
			Roscarberry/Owenahincha Sewerage Scheme	S	1,576,000
			Skibbereen Regional Water Supply Scheme Stage 4	W	7,880,000
					95,646,000
Cork South			Water Conservation Allocation		
Innishannon (Ballinadee/ Ballinspittle/ Garrettstown) Water Supply Scheme	W	6,726,000	Asset Management Study		300,000
Cork West			South Western River Basin District (WFD) Project¹		
Ballylicky Sewerage Scheme	S	2,158,000			9,400,000
Baltimore Sewerage Scheme	S	3,162,000			
Castletownbere Sewerage Scheme	S	3,202,000			
Schull Sewerage Scheme	S	3,523,000			
		24,950,000	Programme Total		485,489,000
Schemes to Advance through Planning					
Cork North					
Mitchelstown North Galtees Water Supply Scheme	W	3,152,000			
Mitchelstown Sewerage Scheme	S	3,000,000			
Newmarket Sewerage Scheme	S	3,152,000			

¹ This project is being led by Cork County Council on behalf of other authorities in the River Basin District

(H) Refers to a Hub as designated in the National Spatial Strategy

(G) Refers to a Gateway as designated in the National Spatial Strategy