An Roinn Seirbhísí Uisce
Comhairle Contae Chiarraí,
Ráth Teas,
Trá Lí, Co. Chiarraí.

Water Services
Kerry County Council,
Rathass,
Tralee, Co. Kerry.

COMHAIRLE CONTAE CHIARRAÍ
KERRY COUNTY COUNCIL

Guthán | Tel 066 7183503 Faics | Fax 066 7181639 Rphost | Email waterservices@kerrycoco.ie Suíomh | Web www.kerrycoco.ie

Administration,
Office of Climate, Licensing and Resource Use,
Environmental Protection Agency,
P.O. Box 3000,
Johnstown Castle Estate,
Co. Wexford.
11/12/09

Subject: Gneeveguilla Agglomeration, Waste Water Discharge Certificate Application.

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This letter accompanies Kerry County Council's application under the Waste Water Discharge (Authorisation) Regulations S.I. No. 684 of 2007, for a Discharge Certificate for the Gneeveguilla agglomeration.
This letter accompanies one signed original application and one copy of the application, in accordance with section 2.4 of the guidance notes.
Please find accompanying this letter two copies of the application files on CD-ROM. The content of the electronic files on the CD-ROM's is a true copy of the original application. A third CD-ROM containing geo-referenced digital drawing files and tabular data templates is also submitted.

The fee of €3,000.00 for this application is incorporated in a cheque for €63,000.00. This cheque is by way of payment for each of the twenty one Discharge Certificate applications being made by Kerry County Council, of which the Gneeveguilla agglomeration is one.

Sincerely,

Colm Mangan,
(Acting Senior Engineer),
Water Services.

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Kerry County Council

Waste Water Discharge Certificate Application

for

Gneeveguilla Agglomeration

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Regulation 18(3)(b) of the Waste Water Discharge (Authorisation) Regulations 2007

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This is a draft document and is subject to revision.

Waste Water Discharge Certificate of Authorisation Application Form

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(Office use only)

Environmental Protection Agency
PO Box 3000, Johnstown Castle Estate, Co. Wexford
Lo Call: 1890 335599 Telephone: 053-9160600 Fax: 053-9160699
Web: www.epa.ieEmail: info@epa.ie

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Tracking Amendments to Draft Application Form

Version No.	Date	Amendment since previous version	Reason
V. 1.	12/06/2009	N/A	
V.2.	17/06/2009	Delete reference to Design Build and Operate	To accurately reflect the information required for the small schemes programme
		Delete the requirement to provide contact information for the associated waste water treatment plant	To accurately reflect the information required and the scale of the waste water works
		Replace references to the Water Services investment Programme with the Small Schemes Programme	To accurately reflect the information required for the small schemes programme
		Update references to new legislation	To reflect changes in legislation
		Inclusion of the requirement to submit information on private WWTPs within the agglomeration.	To obtain an overview of all discharges within the agglomeration.

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Environmental Protection Agency

Application for a Waste Water Discharge Certificate of Authorisation Waste Water Discharge (Authorisation) Regulations, 2007.

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ABOUT THIS APPLICATION FORM

This form is for the purpose of making an application for a Waste Water Discharge Certificate of Authorisation under the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007) or for the review of an existing Waste Water Discharge Certificate of Authorisation.

The Application Form **must** be completed in accordance with the instructions and guidance provided in the *Waste Water Discharge Certificate of Authorisation Application Guidance Note.* The Guidance Note gives an overview of Waste Water Certificates of Authorisation, outlines the certification application process (including the number of copies required) and specifies the information to be submitted as part of the application. The Guidance Note and application form are available to download from the licensing page of the EPA's website at www.epa.ie.

A valid application for a Waste Water Discharge Certificate of Authorisation must contain the information prescribed in the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007). Regulation 24 of the Regulations sets out the statutory requirements for information to accompany a Certificate of Authorisation application. The application form is designed in such a way as to set out these questions in a structured manner and not necessarily in the order presented in the Regulations. In order to ensure a legally valid application with respect to Regulation 24 requirements, please complete the Regulation 24 Checklist provided in the following web based tool: http://78.137.160.73/epa_wwd_licensing/.

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This Application Form does not purport to be and should not be considered a legal interpretation of the provisions and requirements of the Waste Water Discharge (Authorisation) Regulations, 2007. **While every effort has been made to ensure the accuracy of the material contained in the Application Form, the EPA assumes no responsibility and gives no guarantee, or warranty concerning the accuracy, completeness or up-to-date nature of the information provided herein and does not accept any liability whatsoever arising from any errors or omissions.**

Should there be any contradiction between the information requirements set out in the Application Form and any clarifying explanation contained in the accompanying Guidance Note, then the requirements in this Application Form shall take precedence.

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PROCEDURES

The procedure for making and processing of applications for waste water discharge Certificates of Authorisation, and for the processing of reviews of such Certificates, appears in the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007) and is summarised below. The application fees that shall accompany an application are listed in the Third Schedule to the Regulations.

An application for a Certificate of Authorisation must be submitted on the appropriate form (available from the Agency website – http://www.epa.ie/whatwedo/licensing/wwda/) with the correct fee, and should contain relevant supporting documentation as attachments. The application should be based on responses to the form and include supporting written text and the appropriate use of tables and drawings. Where point source emissions occur, a system of unique reference numbers should be used to denote each discharge point. These should be simple, logical, and traceable throughout the application.

The application form is divided into a number of sections of related information. The purpose of these divisions is to facilitate both the applicant and the Agency in the provision of the information and its assessment. **Please adhere to the format as set out in the application form and clearly number each section and associated attachment, if applicable, accordingly.** Attachments should be clearly numbered, titled and paginated and must contain the required information as set out in the application form. Additional attachments may be included to supply any further information supporting the application. Any references made should be supported by a bibliography.

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All questions should be answered. Where information is requested in the application form, which is not relevant to the particular application, the words "not applicable" should be clearly written on the form. The abbreviation "N/A" should not be used.

Additional information may need to be submitted beyond that which is explicitly requested on this form. Any references made should be supported by a bibliography. The Agency may request further information (under notices provided for in the Regulations) if it considers that its provision is material to the assessment of the application. Advice should be sought from the Agency where there is doubt about the type of information required or the level of detail.

Information supplied in this application, including supporting documentation will be put on public display and be open to inspection by any person.

Applicants should be aware that a contravention of the conditions of a waste water discharge Certificate of Authorisation is an offence under the Waste Water Discharge (Authorisation) Regulations, 2007.

The provision of information in an application for a waste water discharge Certificate of Authorisation which is false or misleading is an offence under Regulation 35 of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007).

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Note: Drawings. The following guidelines are included to assist applicants:

- *All drawings submitted should be titled and dated.*
- *All drawings should have a unique reference number and should be signed by a clearly identifiable person.*
- *All drawings should indicate a scale and the direction of north.*
- *All drawings should, generally, be to a scale of between 1:20 to 1:500, depending upon the degree of detail needed to be shown and the size of the facility. Drawings delineating the boundary can be to a smaller scale of between 1:1000 to 1:10560, but must clearly and accurately present the required level of detail. Drawings showing the waste water treatment plant location, if such a plant exists, can be to a scale of between 1:50 000 to 1:126 720. All drawings should, however, be A3 or less and of an appropriate scale such that they are clearly legible. Provide legends on all drawings and maps as appropriate.*
- *In exceptional circumstances, where A3 is considered inadequate, a larger size may be requested by the Agency.*

It should be noted that it will not be possible to process or determine the application until the required documents have been provided in sufficient detail and to a satisfactory standard.

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Waste Water Discharge Licence Application

for

Gneeveguilla Agglomeration

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SECTION A: NON-TECHNICAL SUMMARY - Attachments.

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Waste Water Discharge Licence Application

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Attachment A.1

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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**

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Attachment A.1 Non- Technical Summary

Non-Technical Summary

General:
Gneeveguilla is a village in East Kerry located approximately 7km northwest of Rathmore.
Kerry County Council engaged E.C. Harris/RPS Consultants to formulate a strategy for the delivery of a new upgraded waste water infrastructure for 73 settlements in Kerry.
A Technical Assessment was produced for the Gneeveguilla Agglomeration as part of this strategy. (This document is included as Appendix 1)

Existing Waste Water Works:
Wastewater treatment is provided by an extended aeration plant located to the northwest of the village, constructed in 1981.
The design capacity of the treatment plant is 550pe and is operating within its capacity.

Primary treatment is provided by a coarse bar screen and grit removal channel, both of which require manual cleaning.
An oxidation ditch with brush aerator, followed by clarification, provides secondary treatment. Sludge is pumped to four newly constructed reed beds, which are being piloted to see if they can provide a significant reduction in the volume of sludge to be taken off site.
The topography of the village generally slopes from southeast to northwest through the village.
The existing sewerage network dates from 1979 and consists of:

- 345m of 150mm diameter ductile iron sewers.
- 1,735m of 225mm diameter ductile iron sewers.
- 122m of 300mm diameter ductile iron trunk sewer to the treatment plant.

The network gravitates to a treatment plant to the northwest of the village.
The system is combined with no separate provision for storm water runoff.

Sources of Emissions:
Effluent from the plant is discharged overland through what appears to be a stone filled ditch to a nearby water course, a tributary of the

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Quagmire River. There are no automatic effluent flow measurement or sampling facilities.

The discharges are as follows:

1) Treated effluent (via primary discharge point Eastings 112541, Northings 97199).
2) Stormwater overflow (112554E, 97194N).

Nature and Quantities of Foreseeable emissions:

Kerry County Council has produced a Technical Assessment outlining the fact that the system is working at approximately 59% of capacity.
Proposals have been drawn up to allow the plant meet with future demands so as to comply with required discharge standards as prescribed in Part 1 of the 2nd schedule to the Urban Wastewater Treatment Regulations.

Design criteria for proposed Treatment Plant:

Parameter	Unit	Maximum Discharge Concentration (mg/l)
Population Equivalent	Nr.	660
Per capita flow	l/c/d	180
DWF	Cu.m/d	119
Flow to full treatment 3DWF	Cu.m/d	356
BOD load per capita	Kg/c/d	0.06
BOD load per day	Kg/d	39.6

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Technology for Prevention or Reduction of Emissions:
The existing system is currently working at approximately 59% of capacity however it is expected that the population of Gneeveguilla will increase substantially to 2028 and therefore it is planned to extend the existing plant to bring the overall capacity to 1,100 pe. to cater for future waste water discharges from Gneeveguilla with the required treatment standards for treated effluent being in compliance with the 25/35 standards prescribed in Part 2 of the Second Schedule to the Urban Waste Water Treatment Regulations (UWWTR).

<u>Proposed Foul sewer network:</u>
The existing network consists of some 150mm diameter pipes which are generally deemed inadequate in a public system. It is therefore

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proposed that approximately 343m of 150mm diameter sewer will be replaced with 225mm diameter.
Within the village it is proposed to provide an additional 133m of new 225mm diameter sewer to service zoned lands, gravitating to two pumping stations to the south and southwest of the village. From both pumping stations, wastewater will be pumped approximately 140m to a header manhole on the existing gravity collection system.

Proposed Storm Sewer Network:
It is proposed to provide a separate storm network to cater for runoff from impermeable areas within the development boundary.

- Construction of a new storm network.
    - 918 m of 225mm diameter storm sewer.
    - 412 m of 525mm diameter storm sewer.
    - 506 m of 600mm diameter storm sewer

It is proposed to discharge surface water collected within the village to a land drain, which drains to a nearby water course, a tributary of the Quagmire River.

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Further Measures Planned to Eliminate or Reduce Emissions:

As stated previously there are plans to double the treatment capacity of the plant which will provide for the treatment of a P.E. of approximately 1,100.
A major part of the new works will be the construction of a separate storm water network which will make for better collection of wastewater and the control of storm water.
The new plant when constructed will incorporate comprehensive monitoring and alarms consistent with requirements for the operation of a modern Wastewater Treatment Plant.

Measures planned to monitor emissions to the environment:
The new plant when constructed will incorporate comprehensive monitoring and alarms consistent with requirements for the operation of a modern Wastewater Treatment Plant.

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Waste Water Discharge Licence Application

for

Gneeveguilla Agglomeration

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SECTION B: GENERAL - Attachments.

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Attachment B.1

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SECTION B: GENERAL

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

B.1 Agglomeration Details

Name of Agglomeration:	Gneeveguilla

Applicant's Details

Name and Address for Correspondence

Only application documentation submitted by the applicant and by the nominated person will be deemed to have come from the applicant.

Provide a drawing detailing the agglomeration to which the Certificate of Authorisation application relates. It should have the boundary of the agglomeration to which the Certificate of Authorisation application relates clearly marked in red ink.

Name*:	Kerry County Council
Address:	County Buildings
	Rathass
	Tralee
	County Kerry
Tel:	(066)7183503
Fax:	(066)7181639
e-mail:	waterservices@kerrycoco.ie

*This should be the name of the Water Services Authority in whose ownership or control the waste water works is vested.

*Where an application is being submitted on behalf of more than one Water Services Authority the details provided in Section B.1 shall be that of the lead Water Services Authority.

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Name*:	Charles O'Leary
Address:	Kerry County Council, Water Services Operations
	County Buildings, Rathass
	Tralee
	County Kerry
Tel:	(066)7183503
Fax:	(066)7181639
e-mail:	waterservices@kerrycoco.ie

*This should be the name of person nominated by the Water Services Authority for the purposes of the application.

Co-Applicant's Details

Name*:	Not applicable
Address:	
Tel:	
Fax:	
e-mail:	

*This should be the name of a Water Services Authority, other than the lead authority, where multiple authorities are the subject of a waste water discharge Certificate of Authorisation application.

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Attachment B.1 should contain appropriately scaled drawings / maps (≤A3) of the agglomeration served by the waste water works showing the boundary clearly marked in red ink. These drawings / maps should also be provided as geo-referenced digital drawing files (e.g., ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. These drawings should be provided to the Agency on a separate CD-Rom containing sections B.2, B.3, B.4, B.5, C.1, D.2, E.3 and F.2.

Attachment included	**Yes**	**No**
	√	

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Attachment B.1 Agglomeration Details

Refer to Drawings Appendix 2

EPA Drawing No	Description	Ref No.
B.1-D01	Gneeveguilla Agglomeration (Discovery)	W/09/501
B.1-D02	Gneeveguilla Agglomeration (Vector)	W/09/502
B.1-D03	Waste Water Works	W/09/503

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Attachment B.2

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B.2 Location of Associated Waste Water Treatment Plant(s)

Give the location of the waste water treatment plant associated with the waste water works, if such a plant or plants exists.

Name*:	**Des Fitzgerald E.E.**
Address:	
	Gneeveguilla,
	Co. Kerry
Grid ref (6E, 6N)	**112570E, 97135N**
Level of Treatment	**Secondary**

***This should be the name of the person responsible for the supervision of the waste water treatment plant.

Attachment B.2 should contain appropriately scaled drawings / maps (≤A3) of the site boundary and overall site plan, including labelled discharge, monitoring and sampling points. These drawings / maps should also be provided as geo-referenced digital drawing files (e.g., ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. These drawings should be provided to the Agency on a separate CD-Rom containing sections B.1, B.3, B.4, B.5, C.1, D.2, E.3 and F.2.

Attachment included	**Yes**	**No**
	√	

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Attachment B.2 Location of Associated Waste Water Treatment Plant(s)

Refer to Drawings Appendix 2

EPA Drawing No	Description	Ref No.
B.2-D04	Location of Waste Water Treatment Plant	W/09/504
B.2-D05	Layout of Waste Water Treatment Plant	W/09/505

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Attachment B.3

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B.3 Location of Primary Discharge Point

Give the location of the primary discharge point, as defined in the Waste Water Discharge (Authorisation) Regulation, associated with the waste water works.

Discharge to	**Surface Water (Unnamed Stream).**
Type of Discharge	**Point Source,**
Unique Point Code	**SW1**
Location	**Gneeveguilla**
Grid ref (6E, 6N)	**112541E, 97199N**

Attachment B.3 should contain appropriately scaled drawings / maps (≤A3) of the discharge point, including labelled monitoring and sampling points associated with the discharge point. These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to the Agency on a separate CD-Rom containing the drawings and tabular data requested in sections B.1, B.2, B.4, B.5, C.1, D.2, E.3 and F.2.

Attachment included	**Yes**	**No**
	√	

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Attachment B.3 Location of Primary Discharge Point

Refer to Drawings Appendix 2

EPA Drawing No	Description	Ref No.
B.3-D06	Location of Primary Discharge	W/09/506

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Waste Water Discharge Licence Application

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Gneeveguilla Agglomeration

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Attachment B.4

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B.4 Location of Secondary Discharge Point(s)

Give the location of **all** secondary discharge point(s)* associated with the waste water works. Please refer to Guidance Note for information on Secondary discharge points.

Discharge to	Not Applicable
Type of Discharge	E.g. Diffuser, Lunar Valve, Non-return flap valve, Point source, via Percolation area, via Soakaways etc.
Unique Point Code	
Location	
Grid ref (6E, 6N)	

***Where a septic tank is in existence simultaneous to a package plant within an agglomeration, discharges from the septic tank shall be considered as a secondary discharge.

Attachment B.4 should contain appropriately scaled drawings / maps (≤A3) of the discharge point(s), including labelled monitoring and sampling points associated with the discharge point(s). These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.5, C.1, D.2, E.3 and F.2.

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Attachment included	**Yes**	**No**

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Attachment B.4 Location of Secondary Discharge Point(s)

There are no Secondary discharge points associated with the waste water works in this agglomeration.

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Attachment B.5

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B.5 Location of Storm Water Overflow Point(s)

Give the location of **all** storm water overflow point(s) associated with the waste water works.

Type of Discharge	Point Source
Unique Point Code	
Location	
Grid ref (6E, 6N)	112554E, 97194N

Attachment B.5 should contain appropriately scaled drawings / maps (≤A3) of storm water overflow point(s) associated with the waste water works, including labelled monitoring and sampling points associated with the discharge point(s). These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, C.1, D.2, E.3 and F.2.

Attachment included	**Yes**	**No**
	√	

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Attachment B.5 Location of Storm Water Overflow Point(s)

There is one no. storm water overflow point associated with the waste water works in this agglomeration.
The location is at the wwtp where an overflow pipe enters the stream at coordinates 112554E, 97194N.

Refer to Drawings Appendix 2

EPA Drawing No	Description	Ref No.
B.5-D09	Location of Storm Water Overflows	W/09/509

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Attachment B.6

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B.6 Planning Authority

Give the name of the planning authority, or authorities, in whose functional area the discharge or discharges take place or are proposed to take place.

Name:	Kerry County Council
Address:	Planning Department, Arás an Chontae
	Rathass
	Tralee
	County Kerry
Tel:	(066) 7183582
Fax:	(066) 7120328
e-mail:	plan@kerrycoco.ie

Planning Permission relating to the waste water works which is the subject of this application:- (tick as appropriate)

has been obtained		***is being processed***	
is not yet applied for		***is not required***	√

Local Authority Planning File Reference Nº:	

Attachment B.6 should contain ***the most recent*** planning permission, including a copy of ***all*** conditions, and where an EIS was required, copies of any such EIS and any certification associated with the EIS, should also be enclosed. Where planning permission is not required for the development, provide reasons, relevant correspondence, *etc.*

Attachment included	**Yes**	**No**

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Attachment B.6 Planning Authority

The network was constructed in 1979. It predates the 1993 Planning Act which placed a duty on Local Authorities to submit works being carried out, by them or on behalf of them, to the Part X planning process. Therefore planning permission would not have been required for this waste water network.

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Attachment B.7

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B.7 Other Authorities

B.7 (i) Shannon Free Airport Development Company(SFADCo.) area

B.7 (i) Shannon Free Airport Development Company (SFADCo.) area

The applicant should tick the appropriate box below to identify whether the discharge or discharges are located within the Shannon Free Airport Development Company (SFADCo.) area.

Attachment B.7(i) should contain details of any or all discharges located within the SFADCo. area.

Within the SFADCo Area	**Yes**	**No**

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Attachment B.7 (i) Shannon Free Airport Development Company (SFADCo.) area

None of the discharges in this agglomeration are located within the SFADCo area.

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B.7 (ii) Health Services Executive Region

The applicant should indicate the **Health Services Executive Region** where the discharge or discharges are or will be located.

Name:	HSE South
Address:	Kerry General Hospital
	Tralee
	County Kerry
Tel:	(066)7184500
Fax:	(066)7126241
e-mail:	

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Attachment B.8

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B. 8(i) Population Equivalent of Agglomeration

TABLE B.8.1 POPULATION EQUIVALENT OF AGGLOMERATION

The population equivalent (p.e.) of the agglomeration to be, or being, served by the waste water works should be provided and the period in which the population equivalent data was compiled should be indicated.

Population Equivalent	**270**
Data Compiled (Year)	**2008**
Method	**Population analysis (Geo-Directory)**

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Attachment B. 8(i) Population Equivalent of Agglomeration

The population equivalent figure given is based on an analysis of the existing agglomeration population prepared as part of the County Kerry Waste Water and Sludge Strategy Technical Assessment, by RPS Consulting Engineers in 2008.

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B. 8(ii) Pending Development

Where planning permission has been granted for development(s), but development has not been commenced or completed to date, within the boundary of the agglomeration and this development is being, or is to be, served by the waste water works provide the following information;

- information on the calculated population equivalent (p.e.) to be contributed to the waste water works as a result of those planning permissions granted,
- the percentage of the projected p.e. to be contributed by the non-domestic activities, and
- the ability of the waste water works to accommodate this extra hydraulic and organic loading without posing an environmental risk to the receiving waters.

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Attachment B.8(ii) Pending Development

Population Equivalent for future Development in Gneeveguilla				
Type of Development	***Units***	***No. of Persons***	***BOD (60) grams/day per person***	***Population Equivalent***
Dwelling	***24***	***65***	***1***	***65***

The above Table was compiled using information from the following
(a) Kerry County Development Plan 2009-2015
Urban design and development management
(b) Table 3 Recommended Wastewater loading rates from commercial premises from the Waste Water Treatment Manual
Details from the above documents are included in Appendix 9.

- The calculated population equivalent (p.e.) to be contributed to the waste water works as a result of those planning permissions granted is 65

- The percentage of the projected p.e. to be contributed by the non-domestic activities is 0%

- When constructed the waste water works will have the ability to accommodate this extra hydraulic and organic loading without posing an environmental risk to the receiving waters.

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The programme for appointment of the Consulting Engineer and subsequent work on preparing the Contract Documents will be dependent on obtaining approval from the Department of the Environment, Heritage and Local Government and on the availability of the necessary financial resources.

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B.8(iii) Fees

State the relevant Class of waste water discharge as per Regulation 5, and the appropriate fee as per Columns 2 or 3 of the Third Schedule of the Waste Water Discharges (Authorisation) Regulations 2007, S.I. No. 684 of 2007.

Class of waste water discharge	Fee (in €)
p.e. < 500	€3,000

Appropriate Fee Included	Yes	No
	√	

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Attachment B.9

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B.9 Capital Investment Programme

State whether a programme of works has been prioritised for the development of infrastructure to appropriately collect, convey, treat and discharge waste water from the relevant agglomeration. If a programme of works has been prioritised provide details on funding (local or national small schemes programme) allocated to the capital project. Provide details on the extent and type of work to be undertaken and the likely timeframes for this work to be completed.

Attachment B.9 should contain the most recent development programme, including a copy of any approved funding for the project and a timeframe for the completion of the necessary works to take place.

Attachment included	Yes	No
	√	

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Attachment B.9 Capital Investment Programme

The following documents are included as Appendices.

Technical Assessment on Gneeveguilla Sewerage scheme (Kerry County Council) (Appendix 1).

Kerry County Council Report on proposed Town Sewerage Scheme Programme (Appendix 3).

Kerry County Council Water Services Investment Programme - Draft Assessment of Needs 2006 (Appendix 4).

Department of the Environment, Heritage and Local Government Water Services Investment Programme 2007 to 2009– Kerry (Appendix 5).

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Attachment B.10

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B.10 Significant Correspondence

Provide a summary of any correspondence resulting from a Section 63 notice issued by the Agency in relation to the waste water works under the Environmental Protection Agency Acts, 1992 and 2003, as amended by Section 13 of Protection of the Environment Act, 2003.

Attachment B.10 should contain a summary of any relevant correspondence issued in relation to a Section 63 notice.

Attachment included	**Yes**	**No**
	√	

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Attachment B.10 Significant Correspondence

There is no record of any correspondence resulting from a Section 63 notice issued by the EPA in relation to the Waste Water Works in this agglomeration under the Environmental Protection Agency Acts, 1992 and 2003 as amended by Section 13 of Protection of the Environment Act, 2003.

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Attachment B.11

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B.11 Foreshore Act Licences.

Provide a copy of the most recent Foreshore Act licence issued in relation to discharges from the waste water works issued under the Foreshore Act 1933.

Attachment B.11 should contain the most recent licence issued under the Foreshore Act 1933, including a copy of ***all*** conditions attached to the licence and any monitoring returns for the previous 12-month period, if applicable.

Attachment included	**Yes**	**No**
	√	

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Attachment B.11 Foreshore Act Licences.

As the Gneeveguilla sewer network discharges to an inland river a Foreshore Act licence is not required in relation to discharges from the waste water works, under the Foreshore Act 1933.

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SECTION C: INFRASTRUCTURE & OPERATION - Attachments.

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Attachment C.1

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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.1.1 Storm Water Overflows

For each storm water overflow within the waste water works the following information shall be submitted:

- An assessment to determine compliance with the criteria for storm water overflows, as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995 and any other guidance as may be specified by the Agency, and
- Identify whether any of the storm water overflows are to be decommissioned, and identify a date by which these overflows will cease, if applicable.

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C.1.2 Pumping Stations

For each pump station operating within the waste water works, provide details of the following:

- Number of duty and standby pumps at each pump station;
- The measures taken in the event of power failure;
- Details of storage capacity at each pump station;
- Frequency and duration of activation of emergency overflow to receiving waters. Clarify the location where such discharges enter the receiving waters.

Attachment C.1 should contain supporting documentation with regard to the plant and process capacity, systems, storm water overflows, emergency overflows, etc., including flow diagrams of each with any relevant additional information. These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, D.2, E.3 and F.2.

Attachment included	**Yes**	**No**
	√	

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Attachment C.1 Operational Information Requirements

Wastewater treatment is provided by an extended aeration plant located to the northwest of the village, constructed in 1981.
The design capacity of the treatment plant is 550pe and is operating within its capacity.

Primary treatment is provided by a coarse bar screen and grit removal channel, both of which require manual cleaning.
An oxidation ditch with brush aerator, followed by clarification, provides secondary treatment. Sludge is pumped to four newly constructed reed beds, which are being piloted to see if they can provide a significant reduction in the volume of sludge to be taken off site.
The topography of the village generally slopes from southeast to northwest through the village.
The existing sewerage network dates from 1979 and consists of:

- 345m of 150mm diameter ductile iron sewers.
- 1,735m of 225mm diameter ductile iron sewers.
- 122m of 300mm diameter ductile iron trunk sewer to the treatment plant.

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The network gravitates to a treatment plant to the northwest of the village.
The system is combined with no separate provision for storm water runoff.

Effluent from the plant is discharged overland through what appears to be a stone filled ditch to a nearby water course, a tributary of the Quagmire River. Consequently there are no automatic effluent flow measurement or sampling facilities.

The discharge is as follows:

1. Treated effluent (via primary discharge point Eastings 112541, Northings 97199).
2. Stormwater overflow (112554E, 97194N).

Kerry County Council has produced a Technical Assessment outlining the fact that the system is working at approximately 59% of capacity.
Proposals have been drawn up to allow the plant meet with future demands so as to comply with required discharge standards as

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prescribed in Part 1 of the 2nd schedule to the Urban Wastewater Treatment Regulations.

Design criteria for proposed Treatment Plant:

Parameter	Unit	Maximum Discharge Concentration (mg/l)
Population Equivalent	Nr.	660
Per capita flow	l/c/d	180
DWF	Cu.m/d	119
Flow to full treatment 3DWF	Cu.m/d	356
BOD load per capita	Kg/c/d	0.06
BOD load per day	Kg/d	39.6

The existing system is currently working at approximately 59% of capacity however it is expected that the population of Gneeveguilla will increase substantially to 2028 and therefore it is planned to extend the existing plant to bring the overall capacity to 1,100 pe. to cater for future waste water discharges from Gneeveguilla with the required treatment standards for treated effluent being in compliance with the 25/35 standards prescribed in Part 2 of the Second Schedule to the Urban Waste Water Treatment Regulations (UWWTR).

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Foul Sewer Network:
The existing network consists of some 150mm diameter pipes which are generally deemed inadequate in a public system. It is therefore proposed that approximately 343m of 150mm diameter sewer will be replaced with 225mm diameter.
Within the village it is proposed to provide an additional 133m of new 225mm diameter sewer to service zoned lands, gravitating to two pumping stations to the south and southwest of the village. From both pumping stations, wastewater will be pumped approximately 140m to a header manhole on the existing gravity collection system.

Storm Sewer Network:
It is proposed to provide a separate storm network to cater for runoff from impermeable areas within the development boundary.

- Construction of a new storm network.
  - 918 m of 225mm diameter storm sewer.
  - 412 m of 525mm diameter storm sewer.
  - 506 m of 600mm diameter storm sewer

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It is proposed to discharge surface water collected within the village to a land drain, which drains to a nearby water course, a tributary of the Quagmire River.

As stated previously there are plans to double the treatment capacity of the plant which will provide for the treatment of a P.E. of approximately 1,100.
A major part of the new works will be the construction of a separate storm water network which will make for better collection of wastewater and the control of storm water.

The new plant when constructed will incorporate comprehensive monitoring and alarms consistent with requirements for the operation of a modern Wastewater Treatment Plant.

Refer to Drawings Appendix 2

EPA Drawing No	Description	Ref No.
C.1-D08	Layout of Waste Water Treatment Plant	W/09/508
C.1-D09	Flow Diagram of Waste Water Treatment Plant	W/09/509

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Pumping Stations

There are no pumping stations in the agglomeration.

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SECTION D: DISCHARGES TO THE AQUATIC ENVIRONMENT - Attachments.

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Attachment D.1

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SECTION D: DISCHARGES TO THE AQUATIC ENVIRONMENT

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

Give particulars of the source, location, nature, composition, quantity, level and rate of discharges arising from the agglomeration and, where relevant, the period or periods during which such discharges are made or are to be made.

Details of all discharges of waste water from the agglomeration should be submitted via the following web based link: http://78.137.160.73/epa_wwd_licensing/. ***The applicant should address in particular all discharge points where the substances outlined in Tables 'Emissions to Surface/Groundwaters and 'Dangerous Substances Emissions' are emitted***

Where it is considered that any of the substances listed in Annex X of the Water Framework Directive (2000/60/EC) or any of the Relevant Pollutants listed in Annex VIII of the Water Framework Directive (2000/60/EC) are being discharged from the waste water works or are seen to be present in the receiving water environment downstream of a discharge from the works (as a result of any monitoring programme, e.g., under the Water Framework Directive Programme of Measures) the applicant shall screen the discharge for the relevant substance.

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D.1(i) Discharges to Surface Waters

Details of all discharges of waste water from the agglomeration should be supplied via the following web based link: http://78.137.160.73/epa_wwd_licensing/. Tables 'Discharge Point Details', 'Emissions to Surface/Groundwaters and 'Dangerous Substances Emissions', should be completed for the primary discharge point from the agglomeration and for **each** secondary discharge point, where relevant. Table 'Discharge Point Details' should be completed for **each** storm water overflow. Individual Tables must be completed for each discharge point.

Where monitoring information is available for the influent to the waste water treatment plant this data should also be provided in response to Section D.1(i).

Supporting information should form **Attachment D.1(i)**

Attachment included	**Yes**	**No**

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Attachment D.1(i) Discharges to Surface Waters

There is a considerable amount of data available taken over the last number of years, (particularly in terms of BOD, SS, MRP and TON) due to assessments carried out to establish the impacts of the surrounding areas on Lough Lein and it is the intention to forward these via the web site at a later date.

Sample data for 2009.

Gneeveguilla WWTP						
Influent				Effluent		
Date	BOD (mg/l)	COD (mg/l)	SS (mg/l)	BOD (mg/l)	COD (mg/l)	SS (mg/l)
3/2/09	121	324	102	23	47	17
23/6/09	170	209	98	25	56	18
15/9/09	113	268	124	9	67	17

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D.1(ii) Discharges to Groundwater

Details of all discharges of waste water from the agglomeration should be supplied via the following web based link: http://78.137.160.73/epa_wwd_licensing/. Tables 'Discharge Point Details', 'Emissions to Surface/Groundwaters and 'Dangerous Substances Emissions', should be completed for the primary discharge point from the agglomeration and for **each** secondary discharge point, where relevant. Table 'Discharge Point Details' should be completed for **each** storm water overflow. Individual Tables must be completed for each discharge point.

Where monitoring information is available for the influent to the waste water treatment plant this data should also be provided in response to Section D.1(ii).

Supporting information should form **Attachment D.1(ii)**

Attachment included	**Yes**	**No**

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Attachment D.1(ii) Discharges to Groundwater

There are no discharges to Groundwater.

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D.1 (iii) Private Waste Water Treatment Plants

Provide information on all independently owned/operated private waste water treatment plants operating within the agglomeration. Submit a copy of the Section 4 discharge licence issued under the Water Pollution Acts 1977 to 1990, as amended for each discharge.

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Attachment D.1 (iii) Private Waste Water Treatment Plants

There are no known private septic tanks or package wastewater treatment plants in the area that discharge to the existing network.

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Attachment D.2

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D.2 Tabular Data on Discharge Points

Applicants should submit the following information for each discharge point:

Table D.2:

PT_CD	PT_TYPE	LA_NAME	RWB_TYPE	RWB_NAME	DESIGNATION	EASTING	NORTHING
Point Code Provide label ID's	Point Type (e.g., Primary/ Secondary/ Storm Water Overflow)	Local Authority Name (e.g., Donegal County Council)	Receiving Water Body Type (e.g., River, Lake, Groundwater, Transitional, Coastal)	Receiving Water Body Name (e.g., River Suir)	Protected Area Type (e.g., SAC, candidate SAC, NHA, SPA etc.)	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference

An individual record (i.e. row) is required for each discharge point. Acceptable file formats include Excel, Access or other upon agreement with the Agency. A standard Excel template can be downloaded from the EPA website at www.epa.ie. This data should be submitted to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, C.1, E.3 and F.2.

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Attachment D.2 Tabular Data on Discharge Points

There is a considerable amount of data available taken over the last number of years, (particularly in terms of BOD, SS, MRP and TON) due to assessments carried out to establish the impacts of the surrounding areas on Lough Lein and it is the intention to forward these via the web site at a later date.

Sample data for 2009.

Gneeveguilla WWTP						
Influent				Effluent		
Date	BOD (mg/l)	COD (mg/l)	SS (mg/l)	BOD (mg/l)	COD (mg/l)	SS (mg/l)
3/2/09	121	324	102	23	47	17
23/6/09	170	209	98	25	56	18
15/9/09	113	268	124	9	67	17

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PT_CD	PT_TYPE	LA_NAME	RWB_TYPE	RWB_NAME	DESIGNATION	EASTING	NORTHING
SW 1	Primary Discharge Point	Kerry County Council	River	Quagmire River via unknown stream via stone ditch	SAC Killarney National Park, MacGillycuddy Reeks and Caragh River (SAC 000365)	112541E	97199N
SW 2	Storm water Discharge point	Kerry County Council	River	Quagmire River via unknown stream via stone ditch	SAC Killarney National Park, MacGillycuddy Reeks and Caragh River (SAC 000365)	112554E	97194N

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SECTION E: MONITORING - Attachments.

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Attachment E.1

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SECTION E: MONITORING

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

E.1 Waste Water Discharge Frequency and Quantities – Existing & Proposed

Provide an estimation of the quantity of waste water likely to be emitted in relation to all primary and secondary discharge points applied for. This information should be included in Table 'Discharge Point Details' via the following web based link: http://78.137.160.73/epa_wwd_licensing/.

Provide an estimation of the quantity of waste water likely to be emitted in relation to all storm water overflows within the agglomeration applied for. This information should be included in Table 'Discharge Point Details' via the following web based link: http://78.137.160.73/epa_wwd_licensing/.

Indicate if composite sampling or continuous flow monitoring is in place on the primary or any other discharge points. Detail any plans and timescales for the provision of composite sampling and continuous flow monitoring.

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E.1 Waste Water Discharge Frequency and Quantities – Existing & Proposed

It is not possible to estimate the quantity or frequency of wastewater emitted from Primary discharge points or any secondary discharge points and storm water overflows.
The new extended plant when constructed will incorporate comprehensive monitoring and alarms consistent with requirements for the operation of a modern Wastewater Treatment Plant.

The programme for appointment of the Consulting Engineer and subsequent work on preparing the Contract Documents will be dependent on obtaining approval from the Department of the Environment, Heritage and Local Government and on the availability of the necessary financial resources.

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Attachment E.2

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E.2. Monitoring and Sampling Points

Programmes for environmental monitoring should be submitted as part of the application. These programmes should be provided as Attachment E.2.

Reference should be made to, provision of sampling points and safe means of access, sampling methods, analytical and quality control procedures, including equipment calibration, equipment maintenance and data recording/reporting procedures to be carried out in order to ensure accurate and reliable monitoring.

In determining the sampling programme to be carried out, the variability of the discharge and its effect on the receiving environment should be considered.

Details of any accreditation or certification of analysis should be included. **Attachment E.2** should contain any supporting information.

Attachment included	**Yes**	**No**

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Attachment E.2. Monitoring and Sampling Points

There is a considerable amount of data available taken over the last number of years, (particularly in terms of BOD, SS, MRP and TON) due to assessments carried out to establish the impacts of the surrounding areas on Lough Lein and it is the intention to forward these via the web site at a later date.

It is planned to carry out sampling 6 times annually to determine BOD, COD and SS influent and effluent levels.

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Attachment E.3

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E.3. Tabular data on Monitoring and Sampling Points

Applicants should submit the following information for each monitoring and sampling point:

PT_CD	PT_TYPE	MON_TYPE	EASTING	NORTHING	VERIFIED
Point Code Provide label ID's assigned in section E of application	Point Type (e.g., Primary, Secondary, Storm Water Overflow)	Monitoring Type M = Monitoring S = Sampling	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference	Y = GPS used N = GPS not used

An individual record (i.e., row) is required for each monitoring and sampling point. Acceptable file formats include Excel, Access or other upon agreement with the Agency. A standard Excel template can be downloaded from the EPA website at www.epa.ie. This data should be submitted to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, C.1, D.2 and F.2.

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Attachment E.3. Tabular data on Monitoring and Sampling Points

There is a considerable amount of data available taken over the last number of years, (particularly in terms of BOD, SS, MRP and TON) due to assessments carried out to establish the impacts of the surrounding areas on Lough Lein and it is the intention to forward these via the web site at a later date.

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Attachment E.4

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E.4 Sampling Data

Regulation 24(i) of the Waste Water Discharge (Authorisation) Regulations 2007 requires all applicants in the case of an existing discharge to specify the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application.

Regulation 24(m) requires applicants to give details of compliance with any applicable monitoring requirements and treatment standards.

Attachment E.4 should contain any supporting information.

Attachment included	**Yes**	**No**

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Attachment E.4 Sampling Data

There is a considerable amount of data available taken over the last number of years, (particularly in terms of BOD, SS, MRP and TON) due to assessments carried out to establish the impacts of the surrounding areas on Lough Lein and it is the intention to forward these via the web site at a later date.

Samples taken in 2009 for this waste water treatment plant.

Gneeveguilla WWTP						
Influent				Effluent		
Date	BOD (mg/l)	COD (mg/l)	SS (mg/l)	BOD (mg/l)	COD (mg/l)	SS (mg/l)
3/2/09	121	324	102	23	47	17
23/6/09	170	209	98	25	56	18
15/9/09	113	268	124	9	67	17

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Waste Water Discharge Licence Application

for

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SECTION F: EXISTING ENVIRONMENT & IMPACT OF THE DISCHARGE(S) - Attachments.

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Attachment F.1

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SECTION F: EXISTING ENVIRONMENT & IMPACT OF THE DISCHARGE(S)

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

Clear and concise information is required to enable the Agency to assess the existing receiving environment. This section requires the provision of information on the ambient environmental conditions within the receiving water(s) upstream and downstream of any discharge(s) and/or the ambient environmental conditions of the groundwater upgradient and downgradient of any discharges.

Where development is proposed to be carried out, being development which is of a class for the time being specified under Article 24 (First Schedule) of the Environmental Impact Assessment Regulations, the information on the state of the existing environment should be addressed in the EIS. **In such cases, it will suffice for the purposes of this section to provide adequate cross-references to the relevant sections in the EIS.**

F.1. Impact on Receiving Surface water or Groundwater

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- Details of monitoring of the receiving surface water should be supplied via the following web based link: http://78.137.160.73/epa_wwd_licensing/. Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details' should be completed for the primary discharge point. Surface water monitoring locations upstream and downstream of the discharge point shall be screened for those substances listed in Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details'. Monitoring of surface water shall be carried out at not less than two points, one upstream from the discharge location and one downstream.

- Details of monitoring of the receiving ground water should be supplied via the following web based link: http://78.137.160.73/epa_wwd_licensing/. Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details' should be completed for the primary discharge point. Ground water monitoring locations upgradient and down gradient of the discharge point shall be screened for those substances listed in Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details'. Monitoring of ground water shall be carried out at not less than two points, one upgradient from the discharge location and one downgradient.

- For discharges from secondary discharge points Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details' should be completed.

- Describe the existing environment in terms of water quality with particular reference to environmental quality standards or other legislative standards. Submit a copy of the most recent water quality management plan or catchment management plan in place for the receiving water body.

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Give details of any designation under any Council Directive or Regulations that apply in relation to the receiving surface or groundwater.

- Provide a statement as to whether or not emissions of main polluting substances (as defined in the *Dangerous Substances Regulations S.I. No. 12 of 2001*) to water are likely to impair the environment.

- In circumstances where drinking water abstraction points exist downstream/down gradient of any discharge describe measures to be undertaken to ensure that discharges from the waste water works will not have a significant effect on faecal coliform, salmonella and protozoan pathogen numbers, e.g., Cryptosporidium and Giardia, in the receiving water environment.

- Indicate whether or not emissions from the agglomeration or any plant, methods, processes, operating procedures or other factors which affect such emissions are likely to have a significant effect on –

  (a) a site (until the adoption, in respect of the site, of a decision by the European Commission under Article 21 of Council Directive 92/43/EEC for the purposes of the third paragraph of Article 4(2) of that Directive) —

    (i) notified for the purposes of Regulation 4 of the Natural Habitats Regulations, subject to any amendments made to it by virtue of Regulation 5 of those Regulations,

    (ii) details of which have been transmitted to the Commission in accordance with Regulation 5(4) of the Natural Habitats Regulations, or

    (iii) added by virtue of Regulation 6 of the Natural Habitats Regulations to the list transmitted to the Commission in accordance with Regulation 5(4) of those Regulations,

  (b) a site adopted by the European Commission as a site of Community importance for the purposes of Article 4(2) of Council Directive 92/43/EEC[1] in accordance with the procedures laid down in Article 21 of that Directive,

  (c) a special area of conservation within the meaning of the Natural Habitats Regulations, or

  (d) an area classified pursuant to Article 4(1) or 4(2) of Council Directive 79/409/EEC[2];

  [1]Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ No. L 206, 22.07.1992)

  [2]Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (OJ No. L 103, 25.4.1979)

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- This section should also contain details of any modelling of discharges from the agglomeration. Any other relevant information on the receiving environment should be submitted as **Attachment F.1.**

Attachment included	**Yes**	**No**

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Attachment F.1. Impact on Receiving Surface water or Groundwater

Details of Monitoring of Receiving Surface/Groundwater

- *Details of monitoring of the receiving surface water should be supplied via the following web based link: http://78.137.160.73/epa_wwd_licensing/. Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details' should be completed for the primary discharge point. Surface water monitoring locations upstream and downstream of the discharge point shall be screened for those substances listed in Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details'. Monitoring of surface water shall be carried out at not less than two points, one upstream from the discharge location and one downstream.*

There is a considerable amount of data available, taken over the last number of years, (particularly in terms of BOD, SS, MRP and TON) due to assessments carried out to establish the impacts of the surrounding areas on Lough Lein and it is the intention to forward these via the web site at a later date.

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Samples taken in 2009 for this waste water treatment plant.

Gneeveguilla WWTP						
Influent				Effluent		
Date	BOD (mg/l)	COD (mg/l)	SS (mg/l)	BOD (mg/l)	COD (mg/l)	SS (mg/l)
3/2/09	121	324	102	23	47	17
23/6/09	170	209	98	25	56	18
15/9/09	113	268	124	9	67	17

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Discharges from Secondary Discharge points

- *For discharges from secondary discharge points Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details' should be completed.*

  Answer:

  There are no Secondary Discharge points in the agglomeration.

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Existing Environment

- *Describe the existing environment in terms of water quality with particular reference to environmental quality standards or other legislative standards. Submit a copy of the most recent water quality management plan or catchment management plan in place for the receiving water body. Give details of any designation under any Council Directive or Regulations that apply in relation to the receiving surface or groundwater.*

Answer:

Samples taken in 2009 for this waste water treatment plant indicate general compliance in terms of BOD, COD and SS.

Gneeveguilla WWTP						
Influent				Effluent		
Date	BOD (mg/l)	COD (mg/l)	SS (mg/l)	BOD (mg/l)	COD (mg/l)	SS (mg/l)
3/2/09	121	324	102	23	47	17
23/6/09	170	209	98	25	56	18
15/9/09	113	268	124	9	67	17

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There are a number of regulations governing the required standards for treated effluent from waste water treatment works including the Urban Waste Water Treatment Regulations (UWWTR), 2001 (S.I. No. 254 of 2001) and Local Government (Water Pollution) Act, 1977 (Water Quality Standards for Phosphorous) Regulations, 1988 (S.I. No. 258 of 1998).
In the case of fresh water bodies, further Community Directives, in addition to those above must be considered.

These are outlined as follows:

- Surface Water directive (75/440/EEC) SI 294 of 1989.
- Bathing water Directive (76/440/EEC) SI no. 177 of 1998
- Freshwater Fish Directive (78/659/EEC),
- Nitrates Directive (91/676/EEC) 1992
- Water Quality (Dangerous substances Regulations) SI no. 12 of 2001,
- Memorandum no. 1 Water Quality Guidelines 1978.

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The UWWTR, 2001 sets out specific requirements for treated effluent quality from waste water treatment works serving a population equivalent of 2,000 or more.
For urban waste water from agglomerations of less than 2,000 p.e. the regulations require that 'appropriate treatment' be provided by 31st December 2005.
The term 'appropriate treatment' in the regulations implies treatment to a standard that allows the receiving water to meet any relevant quality standards from other regulations. Relevant regulations in this context would include those made in connection with the EU Bathing water directive, the shellfish directive, salmonid water directive and others. It follows therefore that the level of treatment required will vary with the use/designation and characteristics of the receiving waters.
It has been established that the existing treatment plant in Gneeveguilla is working at approximately 59% of capacity.
Kerry County Council has prepared a Technical Assessment which makes recommendations for its improvement and expansion.
This report is included as Appendix 1.
It is proposed to provide a new sewerage system incorporating secondary treatment.
The relevance of each of the above to the waste water treatment standards at the Gneeveguilla WWTP (both proposed and existing) is discussed here:

- Urban Waste Water Treatment regulations (UWWTR):
  - Neither the Unnamed River or The Quagmire River are designated as sensitive under the Urban Waste Water Treatment Regulations (UWWTR), 2001 (S.I. No. 254 of 2001).
- The Local Government (Water Pollution) Act, 1977 (Water Quality Standards for Phosphorous) Regulations, 1988 (S.I. No. 258 of 1998) oblige Local Authorities to maintain or improve the water quality of rivers by 2007 by reference to Q rating (biotic index) or the concentration of molydbate reactive phosphate (MRP).
  No deterioration in water quality is allowed. The target values are as indicated in Table F.1 below:

Table F.1 Phosphorous regulations Target Values		
Existing Q value	Target Q value	Target MRP (ug P/l_
5	5	15
4/5	4/5	20
4	4	30
¾	4	30
3	3/4	50

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2/3	3/4	50
<2	3	70

These regulations therefore apply in this case.

Surface water Directive:

- As water is not abstracted downstream of the outfall there are no further refinements required.

Water Quality (Dangerous Substances regulations):

- These regulations apply to the licensing of new trade and sewerage effluents and to the review of existing licenses granted under sections 4 and 16 of the Local government (water pollution) act 1977. Whilst no data is available there is no activity in the area to suggest that the receiving waters would be adversely affected by these regulations.

- Fresh water Fish Directive:
  - EC (Quality of Salmonid Waters) Regulations 1988, provide for the maintenance of minimum water quality standards in certain designated rivers. Neither the Unnamed River nor the Quagmire River are designated as a salmonid water and therefore these regulations apply in this case.

- Shellfish Directive:
  - The Quality of Shellfish Waters regulations, 2006 and these regulations place obligations on every public authority to discharge its functions in a manner which would permit compliance with the shellfish regulations.
    The regulations state that the shellfish waters comply with certain quality standards. However there are no designated shellfish production areas within the area under the EC (Quality of Shellfish Waters) Regulations 2006 (SI no. 268 of 2006) and so these regulations do not apply to the discharge specification.

- Bathing Water Regulations:
  The quality standards rely primarily on microbiological parameters. Neither the Unnamed River or The Quagmire River are designated bathing waters under the Quality of Bathing Waters regulations 1992 (SI no. 155 of 1992) and subsequent amendments –(SI no. 145 of 1994, SI no. 177 of 1988 and SI no. 22 of 2001).

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The European Communities (Water Policy) Regulations 2003 (SI no. 722 of 2003), giving effect to the EU Water Framework Directive 2000/60/EC, require Public Authorities to establish an integrated monitoring and management system for all waters, to develop a dynamic programme of management measures and to produce a River Basin Management Plan. This requirement is being implemented through the establishment of River Basin Management projects for River Basin Districts, of which there are eight in Ireland. The Quagmire river is included within the South Western River Basin District (SWRBD).

Water Assimilative Capacity of Receiving Waters:

- In order to determine the suitability of the Unnamed River for discharges from any new wwtp it will be necessary to complete a waste assimilative capacity assessment at the proposed point of discharge. This requires water quality data, which is currently not available. Consequently an assessment based on available dilution at the 95 percentile flow was completed as part of the report.

  There is no flow data available for the Unnamed River Gneeveguilla. An assessment of the 1:50,000 OSI mapping suggests the catchment area of the Unnamed stream to the existing discharge point is 0.53sq.km. Typically, a specific dry weather run-off of greater than 1 l/s/sq.km would be expected, but this figure can be applied to give a conservative estimate of the DWF at the discharge point, calculated as 0.53l/s.
  Typically the 95%ile flow would be approximately twice the DWF, i.e. 1.06l/s.

  Memorandum No.1 'water quality Guidelines' 1978 recommends that the BOD of the receiving water should not be increased by more than 1mg/l.
  The estimated current and ultimate design DWF from the treatment plant are 0.68l/s and 2.29l/s respectively.
  Hence the available dilutions at 95%ile flow are (1.06/0.68) = 1.6 and (1.06/2.29) = 0.5 respectively.
  Both are significantly less than the 25 required to limit the increase in BOD in the receiving water to less than 1mg/l.
  This suggests that the receiving water does not have the required assimilative capacity at the existing discharge point, given the current level of treatment employed.

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In order to provide the required dilution factor of 25 at the proposed ultimate treatment capacity, a 95%ile flow of (25* 2.29) = 57.25l/s is required.
Assuming a specific 95%ile run-off of 2l/s/sq.km, the catchment area to the point of discharge must be greater than (57.25/2) = 28.63 sq.km.
The catchment area of the unnamed stream to its confluence with the Quagmire River is approximately 3.2 sq.km.
Furthermore, the catchment area of the Quagmire river is less than that required until 2km downstream, following the confluence with another tributary in Scrahanaveal townland.
The catchment area at the confluence is 30.8 sq.km.
It would be necessary to construct approximately 3.6km of 225mm diameter outfall in fields to discharge to this location.
Therefore for the purposes of this assessment it is assumed that the existing oxidation ditch and clarifier will be duplicated to increase the secondary treatment capacity of the plant to 1,100 pe and that a new 3.6km of 225mm diameter will be provided.

In addition it is assumed that new inlet works will be provided, including mechanical grit classifiers and screen rakes at the inlet and outlet flow and automatic sampling facilities will be provided. As there are no stormwater overflows in the network, the new inlet works should also include an overflow to a storm water holding tank, designed to provide 2-hour retention at 3DWF.

The programme for appointment of the Consulting Engineer and subsequent work on preparing the Contract Documents will be dependent on obtaining approval from the Department of the Environment, Heritage and Local Government and on the availability of the necessary financial resources.

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Impact of Dangerous Substances on Receiving Surface water or Groundwater

Provide a statement as to whether or not emissions of main polluting substances (as defined in the Dangerous Substances Regulations S.I. No. 12 of 2001) to water are likely to impair the environment.

Answer:

There is no data available to comment on this section. However it is unlikely, given the location that dangerous substances in any quantities would impact on the receiving waters.

Impact on Drinking Water Abstraction Points

In circumstances where drinking water abstraction points exist downstream/down gradient of any discharge describe measures to be undertaken to ensure that discharges from the waste water works will not have a significant effect on faecal coliform, salmonella and protozoan pathogen numbers, e.g., Cryptosporidium and Giardia in the receiving water environment.

Answer:

No drinking water abstraction points exist downstream of any discharges.

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Impact of Emissions on European Sites

Indicate whether or not emissions from the agglomeration or any plant, methods, processes, operating procedures or other factors which affect such emissions are likely to have a significant effect on –

(a) a site (until the adoption, in respect of the site, of a decision by the European Commission under Article 21 of Council Directive 92/43/EEC for the purposes of the third paragraph of Article 4(2) of that Directive) —

(i) notified for the purposes of Regulation 4 of the Natural Habitats Regulations, subject to any amendments made to it by virtue of Regulation 5 of those Regulations,

(ii) details of which have been transmitted to the Commission in accordance with Regulation 5(4) of the Natural Habitats Regulations, or

(iii) added by virtue of Regulation 6 of the Natural Habitats Regulations to the list transmitted to the Commission in accordance with Regulation 5(4) of those Regulations,

(b) a site adopted by the European Commission as a site of Community importance for the purposes of Article 4(2) of Council Directive 92/43/EEC[1] in accordance with the procedures laid down in Article 21 of that Directive,

(c) a special area of conservation within the meaning of the Natural Habitats Regulations, or

(d) an area classified pursuant to Article 4(1) or 4(2) of Council Directive 79/409/EEC[2];

[1]Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ No. L 206, 22.07.1992)

[2]Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (OJ No. L 103, 25.4.1979)

Answer:

Wastewater treatment is provided by an extended aeration plant located to the northwest of the village, constructed in 1981.

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The design capacity of the treatment plant is 550pe and is operating within its capacity.

Primary treatment is provided by a coarse bar screen and grit removal channel, both of which require manual cleaning.
An oxidation ditch with brush aerator, followed by clarification, provides secondary treatment. Sludge is pumped to four newly constructed reed beds, which are being piloted to see if they can provide a significant reduction in the volume of sludge to be taken off site.
The topography of the village generally slopes from southeast to northwest through the village.
The existing sewerage network dates from 1979 and consists of:

- 345m of 150mm diameter ductile iron sewers.
- 1,735m of 225mm diameter ductile iron sewers.
- 122m of 300mm diameter ductile iron trunk sewer to the treatment plant.

The network gravitates to a treatment plant to the northwest of the village.
The system is combined with no separate provision for storm water runoff.

Effluent from the plant is discharged overland through what appears to be a stone filled ditch to a nearby water course, a tributary of the Quagmire River. Consequently there are no automatic effluent flow measurement or sampling facilities.

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The Quagmire River forms part of the Killarney National park, MacGillycuddy's Reeks and Caragh River catchment Special Area of Conservation (SAC site code 000365).

The above SAC is attached as Appendix 6.

Attached is a letter sent to the NPWS requesting its input into whether an assessment may be required.

Attached also is a response received from the NPWS stating that discharges from this agglomeration are likely to have significant adverse affects on a European site and it is likely that an appropriate assessment will be required.

Letter and response attached as Appendix 7.

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Details of any Modelling of Discharges

This section should also contain details of any modelling of discharges from the agglomeration. Any other relevant information on the receiving environment should be submitted as ***Attachment F.1.***

Answer:

No modelling of discharges has been carried out.

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Attachment F.2

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F.2 Tabular Data on Drinking Water Abstraction Point(s)

Applicants should submit the following information for each downstream or downgradient drinking water abstraction point. The zone of contribution for the abstraction point should be delineated and any potential risks from the waste water discharge to the water quality at that abstraction point identified.

ABS_CD	AGG_SERVED	ABS_VOL	PT_CD	DIS_DS	EASTING	NORTHING	VERIFIED
Abstraction Code	Agglomeration served	Abstraction Volume in m^3/day	Point Code Provide label ID's	Distance Downstream in meters from Emission Point to Abstraction Point	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference	Y = GPS used N = GPS not used

Note: Attach any risk assessment that may have been carried out in relation to the abstraction point(s) listed.

An individual record (i.e. row) is required for each abstraction point. Acceptable file formats include Excel, Access or other upon agreement with the Agency. A standard Excel template can be downloaded from the EPA website at www.epa.ie. This data should be submitted to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, C.1, D.2 and E.3.

Attachment F.2 should contain any supporting information.

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Attachment F.2 Tabular Data on Drinking Water Abstraction Point(s)

There are no drinking water abstraction points downstream.

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SECTION G: PROGRAMMES OF IMPROVEMENTS - Attachments.

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Attachment G.1

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SECTION G: PROGRAMMES OF IMPROVEMENTS

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

G.1 Compliance with Council Directives

Provide details on a programme of improvements to ensure that emissions from the agglomeration or any premises, plant, methods, processes, operating procedures or other factors which affect such emissions will comply with, or will not result in the contravention of the;

- Dangerous Substances Directive 2006/11/EC,
- Water Framework Directive 2000/60/EC,
- Birds Directive 79/409/EEC,
- Groundwater Directives 80/68/EEC & 2006/118/EC,
- Drinking Water Directives 80/778/EEC,
- Urban Waste Water Treatment Directive 91/271/EEC,
- Habitats Directive 92/43/EEC,
- Environmental Liabilities Directive 2004/35/EC,
- Bathing Water Directive 76/160/EEC, and
- Shellfish Waters Directive (2006/113/EC).

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Attachment G.1 should contain the most recent programme of improvements, including a copy of any approved funding for the project and a timeframe for the completion of the necessary works to take place.

Attachment included	**Yes**	**No**

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Attachment G.1 Compliance with Council Directives

Very little data is available in respect of samples, however Kerry County Council has produced a Technical Assessment outlining the fact that the system is working at approximately 59% of capacity. This report is included as Appendix 1.

It is expected that the population of Gneeveguilla will increase substantially to 2028 and therefore it is planned to extend the existing plant to bring the overall capacity to 1,100 pe.
to cater for future waste water discharges from Gneeveguilla with the required treatment standards for treated effluent being in compliance with the 25/35 standards prescribed in Part 2 of the Second Schedule to the Urban Waste Water Treatment Regulations (UWWTR).

Design criteria for proposed Treatment Plant:

Parameter	Unit	Maximum Discharge Concentration (mg/l)
Population Equivalent	Nr.	660
Per capita flow	l/c/d	180
DWF	Cu.m/d	119
Flow to full treatment 3DWF	Cu.m/d	356
BOD load per capita	Kg/c/d	0.06
BOD load per day	Kg/d	39.6

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There are a number of regulations governing the required standards for treated effluent from waste water treatment works including the Urban Waste Water Treatment Regulations (UWWTR), 2001 (S.I. No. 254 of 2001) and Local Government (Water Pollution) Act, 1977 (Water Quality Standards for Phosphorous) Regulations, 1988 (S.I. No. 258 of 1998).
In the case of fresh water bodies, further Community Directives, in addition to those above must be considered.

These are outlined as follows:

- Surface Water directive (75/440/EEC) SI 294 of 1989.
- Bathing water Directive (76/440/EEC) SI no. 177 of 1998
- Freshwater Fish Directive (78/659/EEC),
- Nitrates Directive (91/676/EEC) 1992
- Water Quality (Dangerous substances Regulations) SI no. 12 of 2001,

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- Memorandum no. 1 Water Quality Guidelines 1978.

The UWWTR, 2001 sets out specific requirements for treated effluent quality from waste water treatment works serving a population equivalent of 2,000 or more.
For urban waste water from agglomerations of less than 2,000 p.e. the regulations require that 'appropriate treatment' be provided by 31st December 2005.
The term 'appropriate treatment' in the regulations implies treatment to a standard that allows the receiving water to meet any relevant quality standards from other regulations. Relevant regulations in this context would include those made in connection with the EU Bathing water directive, the shellfish directive, salmonid water directive and others. It follows therefore that the level of treatment required will vary with the use/designation and characteristics of the receiving waters.
It has been established that the existing treatment plant in Gneeveguilla is working at approximately 59% of capacity.
It is proposed to provide a new sewerage system incorporating secondary treatment.
The relevance of each of the above to the waste water treatment standards at the Gneeveguilla WWTP (both proposed and existing) is discussed here:

- Urban Waste Water Treatment regulations (UWWTR):
  - Neither the Unnamed River or The Quagmire River are designated as sensitive under the Urban Waste Water Treatment Regulations (UWWTR), 2001 (S.I. No. 254 of 2001).
- The Local Government (Water Pollution) Act, 1977 (Water Quality Standards for Phosphorous) Regulations, 1988 (S.I. No. 258 of 1998) oblige Local Authorities to maintain or improve the water quality of rivers by 2007 by reference to Q rating (biotic index) or the concentration of molydbate reactive phosphate (MRP).
  No deterioration in water quality is allowed. The target values are as indicated in Table F.1 below:

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Table F.1 Phosphorous regulations Target Values		
Existing Q value	Target Q value	Target MRP (ug P/l_
5	5	15
4/5	4/5	20
4	4	30
¾	4	30
3	3/4	50
2/3	3/4	50
<2	3	70

These regulations therefore apply in this case.

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Surface water Directive:

- As water is not abstracted downstream of the outfall there are no further refinements required.

Water Quality (Dangerous Substances regulations):

- These regulations apply to the licensing of new trade and sewerage effluents and to the review of existing licenses granted under sections 4 and 16 of the Local government (water pollution) act 1977. Whilst no data is available there is no activity in the area to suggest that the receiving waters would be adversely affected by these regulations.

- Fresh water Fish Directive:
  - EC (Quality of Salmonid Waters) Regulations 1988, provide for the maintenance of minimum water quality standards in certain designated rivers. Neither the Unnamed River nor the Quagmire River is designated as a salmonid water and therefore these regulations apply in this case.

- Shellfish Directive:
  - The Quality of Shellfish Waters regulations, 2006 and these regulations place obligations on every public authority to discharge its functions in a manner which would permit compliance with the shellfish regulations. The regulations state that the shellfish waters comply with certain quality standards. However there are no designated shellfish production areas within the area under the EC (Quality of Shellfish Waters) Regulations 2006 (SI no. 268 of 2006) and so these regulations do not apply to the discharge specification.

- Bathing Water Regulations:

  The quality standards rely primarily on microbiological parameters. Neither the Unnamed River or The Quagmire River are designated bathing waters under the Quality of Bathing Waters regulations 1992 (SI no. 155 of 1992) and subsequent amendments –(SI no. 145 of 1994, SI no. 177 of 1988 and SI no. 22 of 2001).

  The European Communities (Water Policy) Regulations 2003 (SI no. 722 of 2003), giving effect to the EU Water Framework Directive 2000/60/EC, require Public Authorities to establish an integrated monitoring and

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management system for all waters, to develop a dynamic programme of management measures and to produce a River Basin Management Plan. This requirement is being implemented through the establishment of River Basin Management projects for River Basin Districts, of which there are eight in Ireland. The Quagmire river is included within the South Western River Basin District (SWRBD).

Water Assimilative Capacity of Receiving Waters:

- In order to determine the suitability of the Unnamed River for discharges from any new wwtp it will be necessary to complete a waste assimilative capacity assessment at the proposed point of discharge. This requires water quality data, which is currently not available. Consequently an assessment based on available dilution at the 95 percentile flow was completed as part of the report.

  There is no flow data available for the Unnamed River Gneeveguilla. An assessment of the 1:50,000 OSI mapping suggests the catchment area of the Unnamed stream to the existing discharge point is 0.53sq.km. Typically, a specific dry weather run-off of greater than 1 l/s/sq.km would be expected, but this figure can be applied to give a conservative estimate of the DWF at the discharge point, calculated as 0.53l/s.
  Typically the 95%ile flow would be approximately twice the DWF, i.e. 1.06l/s.

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  Memorandum No.1 'water quality Guidelines' 1978 recommends that the BOD of the receiving water should not be increased by more than 1mg/l.
  The estimated current and ultimate design DWF from the treatment plant is 0.68l/s and 2.29l/s respectively.
  Hence the available dilutions at 95%ile flow are (1.06/0.68) = 1.6 and (1.06/2.29) = 0.5 respectively.
  Both are significantly less than the 25 required to limit the increase in BOD in the receiving water to less than 1mg/l.
  This suggests that the receiving water does not have the required assimilative capacity at the existing discharge point, given the current level of treatment employed.

  In order to provide the required dilution factor of 25 at the proposed ultimate treatment capacity, a 95%ile flow of (25* 2.29) = 57.25l/s is required.

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Assuming a specific 95%ile run-off of 2l/s/sq.km, the catchment area to the point of discharge must be greater than (57.25/2) = 28.63 sq.km.
The catchment area of the unnamed stream to its confluence with the Quagmire River is approximately 3.2 sq.km. Furthermore, the catchment area of the Quagmire river is less than that required until 2km downstream, following the confluence with another tributary in Scrahanaveal townland. The catchment area at the confluence is 30.8 sq.km.
It would be necessary to construct approximately 3.6km of 225mm diameter outfall in fields to discharge to this location. Therefore for the purposes of this assessment it is assumed that the existing oxidation ditch and clarifier will be duplicated to increase the secondary treatment capacity of the plant to 1,100 pe and that a new 3.6km of 225mm diameter will be provided.

In addition it is assumed that new inlet works will be provided, including mechanical grit classifiers and screen rakes at the inlet and outlet flow and automatic sampling facilities will be provided. As there are no stormwater overflows in the network, the new inlet works should also include an overflow to a storm water holding tank, designed to provide 2-hour retention at 3DWF.

The programme for appointment of the Consulting Engineer and subsequent work on preparing the Contract Documents will be dependent on obtaining approval from the Department of the Environment, Heritage and Local Government and on the availability of the necessary financial resources.

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Foul Sewer Network:
The existing network consists of some 150mm diameter pipes which are generally deemed inadequate in a public system. It is therefore proposed that approximately 343m of 150mm diameter sewer will be replaced with 225mm diameter.
Within the village it is proposed to provide an additional 133m of new 225mm diameter sewer to service zoned lands, gravitating to two pumping stations to the south and southwest of the village. From both pumping stations, wastewater will be pumped approximately 140m to a header manhole on the existing gravity collection system.

Storm Sewer Network:
It is proposed to provide a separate storm network to cater for runoff from impermeable areas within the development boundary.

- Construction of a new storm network.
    - 918 m of 225mm diameter storm sewer.

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- 412 m of 525mm diameter storm sewer.
- 506 m of 600mm diameter storm sewer

It is proposed to discharge surface water collected within the village to a land drain, which drains to a nearby water course, a tributary of the Quagmire River.

As stated previously there are plans to double the treatment capacity of the plant which will provide for the treatment of a P.E. of approximately 1,100.
A major part of the new works will be the construction of a separate storm water network which will make for better collection of wastewater and the control of storm water.

The new plant when constructed will incorporate comprehensive monitoring and alarms consistent with requirements for the operation of a modern Wastewater Treatment Plant.

No assessment has been carried out to determine compliance with the criteria for storm water overflows, as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995 and any other guidance as may be specified by the Agency.

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The programme for appointment of the Consulting Engineer and subsequent work on preparing the Contract Documents will be dependent on obtaining approval from the Department of the Environment, Heritage and Local Government and on the availability of the necessary financial resources.

A copy of the County Kerry Wastewater & Sludge Project 'Strategy for Delivery' is included as Appendix 8.

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Attachment G.2

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G.2 Compliance with the European Communities Environmental Objectives (Surface Waters) Regulations 2009

Provide details on a programme of improvements, including any water quality management plans or catchment management plans in place, to ensure that improvements of water quality required under the European Communities Environmental Objectives (Surface Waters) Regulations 2009 are being achieved. Provide details of any specific measures adopted for waste water works specified in Phosphorus Measures Implementation reports and the progress to date of those measures. Provide details highlighting any waste water works that have been previously identified as the principal sources of pollution under the Phosphorous Regulations (S.I. No. 258 of 1998).

Attachment G.2 should contain the most recent programme of improvements and any associated documentation requested under Section G.3 of the application.

Attachment included	**Yes**	**No**

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Atachment G.2 Compliance with the European Communities Environmental Objectives (Surface Waters) Regulations 2009

The information provided in G.1 is repeated here.

Very little data is available in respect of samples, however Kerry County Council has produced a Technical Assessment outlining the fact that the system is working at approximately 59% of capacity. Proposals have been drawn up to allow the plant meet with future demands so as to comply with required discharge standards as prescribed in Part 1 of the 2nd schedule to the Urban Wastewater Treatment Regulations.

Design criteria for proposed Treatment Plant:

Parameter	Unit	Maximum Discharge Concentration (mg/l)
Population Equivalent	Nr.	660
Per capita flow	l/c/d	180
DWF	Cu.m/d	119
Flow to full treatment 3DWF	Cu.m/d	356
BOD load per capita	Kg/c/d	0.06
BOD load per day	Kg/d	39.6

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The existing system is currently working at approximately 59% of capacity however it is expected that the population of Gneeveguilla will increase substantially to 2028 and therefore it is planned to extend the existing plant to bring the overall capacity to 1,100 pe. to cater for future waste water discharges from Gneeveguilla with the required treatment standards for treated effluent being in compliance with the 25/35 standards prescribed in Part 2 of the Second Schedule to the Urban Waste Water Treatment Regulations (UWWTR).

Phosphorous Regulations:

- The Local Government (Water Pollution) Act, 1977 (Water Quality Standards for Phosphorous) Regulations, 1988 (S.I. No. 258 of 1998) oblige Local Authorities to maintain or improve the water quality of rivers by 2007 by reference to Q rating (biotic index) or the concentration of molydbate reactive phosphate (MRP).
  No deterioration in water quality is allowed. The target values are as indicated in Table F.1 below:

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Table F.1 Phosphorous regulations Target Values		
Existing Q value	Target Q value	Target MRP (ug P/l_
5	5	15
4/5	4/5	20
4	4	30
¾	4	30
3	3/4	50
2/3	3/4	50
<2	3	70

These regulations therefore apply in this case.

Water Assimilative Capacity of Receiving Waters:

- In order to determine the suitability of the Unnamed River for discharges from any new wwtp it will be necessary to complete a waste assimilative capacity assessment at the proposed point of discharge. This requires water quality data, which is currently not available. Consequently an assessment based on available dilution at the 95 percentile flow was completed as part of the report.

  There is no flow data available for the Unnamed River Gneeveguilla. An assessment of the 1:50,000 OSI mapping suggests the catchment area of the unnamed stream to the existing discharge point is 0.53sq.km. Typically, a specific dry weather run-off of greater than 1 l/s/sq.km would be expected, but this figure can be applied to give a conservative estimate of the DWF at the discharge point, calculated as 0.53l/s.
  Typically the 95%ile flow would be approximately twice the DWF, i.e. 1.06l/s.

  Memorandum No.1 'water quality Guidelines' 1978 recommends that the BOD of the receiving water should not be increased by more than 1mg/l.
  The estimated current and ultimate design DWF from the treatment plant is 0.68l/s and 2.29l/s respectively.
  Hence the available dilutions at 95%ile flow are (1.06/0.68) = 1.6 and (1.06/2.29) = 0.5 respectively.
  Both are significantly less than the 25 required to limit the increase in BOD in the receiving water to less than 1mg/l.
  This suggests that the receiving water does not have the required assimilative capacity at the existing discharge point, given the current level of treatment employed.

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In order to provide the required dilution factor of 25 at the proposed ultimate treatment capacity, a 95%ile flow of (25* 2.29) = 57.25l/s is required.
Assuming a specific 95%ile run-off of 2l/s/sq.km, the catchment area to the point of discharge must be greater than (57.25/2) = 28.63 sq.km.
The catchment area of the unnamed stream to its confluence with the Quagmire River is approximately 3.2 sq.km.
Furthermore, the catchment area of the Quagmire River is less than that required until 2km downstream, following the confluence with another tributary in Scrahanaveal townland.
The catchment area at the confluence is 30.8 sq.km.
It would be necessary to construct approximately 3.6km of 225mm diameter outfall in fields to discharge to this location.
Therefore for the purposes of this assessment it is assumed that the existing oxidation ditch and clarifier will be duplicated to increase the secondary treatment capacity of the plant to 1,100 pe and that a new 3.6km of 225mm diameter will be provided.

In addition it is assumed that new inlet works will be provided, including mechanical grit classifiers and screen rakes at the inlet and outlet flow and automatic sampling facilities will be provided. As there are no stormwater overflows in the network, the new inlet works should also include an overflow to a storm water holding tank, designed to provide 2-hour retention at 3DWF.

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Foul Sewer Network:
The existing network consists of some 150mm diameter pipes which are generally deemed inadequate in a public system. It is therefore proposed that approximately 343m of 150mm diameter sewer will be replaced with 225mm diameter.
Within the village it is proposed to provide an additional 133m of new 225mm diameter sewer to service zoned lands, gravitating to two pumping stations to the south and southwest of the village.
From both pumping stations, wastewater will be pumped approximately 140m to a header manhole on the existing gravity collection system.

Storm Sewer Network:
It is proposed to provide a separate storm network to cater for runoff from impermeable areas within the development boundary.

- Construction of a new storm network.
  - 918 m of 225mm diameter storm sewer.
  - 412 m of 525mm diameter storm sewer.
  - 506 m of 600mm diameter storm sewer

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It is proposed to discharge surface water collected within the village to a land drain, which drains to a nearby water course, a tributary of the Quagmire River.

As stated previously there are plans to double the treatment capacity of the plant which will provide for the treatment of a P.E. of approximately 1,100.
A major part of the new works will be the construction of a separate storm water network which will make for better collection of wastewater and the control of storm water.

The new plant when constructed will incorporate comprehensive monitoring and alarms consistent with requirements for the operation of a modern Wastewater Treatment Plant.

No assessment has been carried out to determine compliance with the criteria for storm water overflows, as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995 and any other guidance as may be specified by the Agency.

The programme for appointment of the Consulting Engineer and subsequent work on preparing the Contract Documents will be dependent on obtaining approval from the Department of the Environment, Heritage and Local Government and on the availability of the necessary financial resources.

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Attachment G.3

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G.3 Impact Mitigation

Provide details on a programme of improvements to ensure that discharges from the agglomeration will not result in significant environmental pollution.

Attachment G.3 should contain the most recent programme of improvements, including a copy of any approved funding for the project and a timeframe for the completion of the necessary works to take place.

Attachment included	**Yes**	**No**

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Attachment G.3 Impact Mitigation

The information provided in G.1 and G.2 is repeated here.

Very little data is available in respect of samples, however Kerry County Council has produced a Technical Assessment outlining the fact that the system is working at approximately 59% of capacity. Proposals have been drawn up to allow the plant meet with future demands so as to comply with required discharge standards as prescribed in Part 1 of the 2nd schedule to the Urban Wastewater Treatment Regulations.

Design criteria for proposed Treatment Plant:

Parameter	Unit	Maximum Discharge Concentration (mg/l)
Population Equivalent	Nr.	660
Per capita flow	l/c/d	180
DWF	Cu.m/d	119
Flow to full treatment 3DWF	Cu.m/d	356
BOD load per capita	Kg/c/d	0.06
BOD load per day	Kg/d	39.6

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The existing system is currently working at approximately 59% of capacity however it is expected that the population of Gneeveguilla will increase substantially to 2028 and therefore it is planned to extend the existing plant to bring the overall capacity to 1,100 pe. to cater for future waste water discharges from Gneeveguilla with the required treatment standards for treated effluent being in compliance with the 25/35 standards prescribed in Part 2 of the Second Schedule to the Urban Waste Water Treatment Regulations (UWWTR).

The existing network consists of some 150mm diameter pipes which are generally deemed inadequate in a public system. It is therefore proposed that approximately 343m of 150mm diameter sewer will be replaced with 225mm diameter.
Within the village it is proposed to provide an additional 133m of new 225mm diameter sewer to service zoned lands, gravitating to two pumping stations to the south and southwest of the village. From both pumping stations, wastewater will be pumped approximately 140m to a header manhole on the existing gravity collection system.

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It is proposed to provide a separate storm network to cater for runoff from impermeable areas within the development boundary.

- Construction of a new storm network.
    - 918 m of 225mm diameter storm sewer.
    - 412 m of 525mm diameter storm sewer.
    - 506 m of 600mm diameter storm sewer

It is proposed to discharge surface water collected within the village to a land drain, which drains to a nearby water course, a tributary of the Quagmire River.

As stated previously there are plans to double the treatment capacity of the plant which will provide for the treatment of a P.E. of approximately 1,100.
A major part of the new works will be the construction of a separate storm water network which will make for better collection of wastewater and the control of storm water.

The new plant when constructed will incorporate comprehensive monitoring and alarms consistent with requirements for the operation of a modern Wastewater Treatment Plant.

No assessment has been carried out to determine compliance with the criteria for storm water overflows, as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995 and any other guidance as may be specified by the Agency.

The programme for appointment of the Consulting Engineer and subsequent work on preparing the Contract Documents will be dependent on obtaining approval from the Department of the Environment, Heritage and Local Government and on the availability of the necessary financial resources.

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Attachment G.4

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G.4 Storm Water Overflows

Provide details on a programme of improvements to ensure that discharges other than the primary and secondary discharges comply with the definition of 'storm water overflow' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007.

Attachment G.4 should contain the most recent programme of improvements, including a copy of any approved funding for the project and a timeframe for the completion of the necessary works to take place.

Attachment included	**Yes**	**No**

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Attachment G.4 Storm Water Overflows

No assessment has been carried out to determine compliance with the criteria for storm water overflows, as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995 and any other guidance as may be specified by the Agency. However any storm overflows designed as part of the proposed WWTP will comply with this document.

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SECTION H: Declaration

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SECTION H: DECLARATION

Declaration

I hereby make application for a waste water discharge Certificate of Authorisation/revised Certificate of Authorisation, pursuant to the provisions of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007).

I certify that the information given in this application is truthful, accurate and complete.

I give consent to the EPA to copy this application for its own use and to make it available for inspection and copying by the public, both in the form of paper files available for inspection at EPA and local authority offices, and via the EPA's website.

This consent relates to this application itself and to any further information or submission, whether provided by me as Applicant, any person acting on the Applicant's behalf, or any other person.

Signed by : _____ **Date :** 17/12/9
(on behalf of the organisation)

Print signature name: Colm Mangan

Position in organisation: Acting Senior Engineer

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SECTION I: Joint Declaration

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SECTION I: JOINT DECLARATION

Joint Declaration [Note1]

I hereby make application for a waste water discharge Certificate of Authorisation /revised Certificate of Authorisation, pursuant to the provisions of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007).

I certify that the information given in this application is truthful, accurate and complete.

I give consent to the EPA to copy this application for its own use and to make it available for inspection and copying by the public, both in the form of paper files available for inspection at EPA and local authority offices, and via the EPA's website.

This consent relates to this application itself and to any further information or submission whether provided by me as Applicant, any person acting on the Applicant's behalf, or any other person.

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Lead Authority

Signed by : _____ **Date :** _____
(on behalf of the organisation)

Print signature name: _____

Position in organisation: _____

Co-Applicants

Signed by : _____ **Date :** _____
(on behalf of the organisation)

Print signature name: _____

Position in organisation: _____

Signed by : _____ **Date :** _____
(on behalf of the organisation)

Print signature name: _____

Position in organisation: _____

Note 1: In the case of an application being lodged on behalf of more than a single Water Services Authority the following declaration must be signed by all applicants.

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10. GNEEVEGUILLA

10.1 INTRODUCTION

Gneeveguilla is a village located in east Kerry located approximately 7km northwest of Rathmore.

The village provides a range of local services, including a primary school, two shops, a post office, a church, funeral home, a public house, a community centre, a GAA club, and a credit union in which HSE health clinics are also held.

Figure 10.1: Location Map

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10.2 EXISTING SYSTEM

10.2.1 Existing Network

Based on the CIS data provided by Kerry County Council, the existing sewerage network in the village dates from 1979 and consists of:-

- 345m of 150mm diameter ductile iron sewers.
- 1,735m of 225mm diameter ductile iron sewers.
- 122m of 300mm diameter ductile iron trunk sewer to the treatment plant.

The network gravitates to a wastewater treatment plant at the northwest of the village. The system acts as a combined system with no separate provision for storm water runoff. The existing network layout is shown on Figure 10.2.

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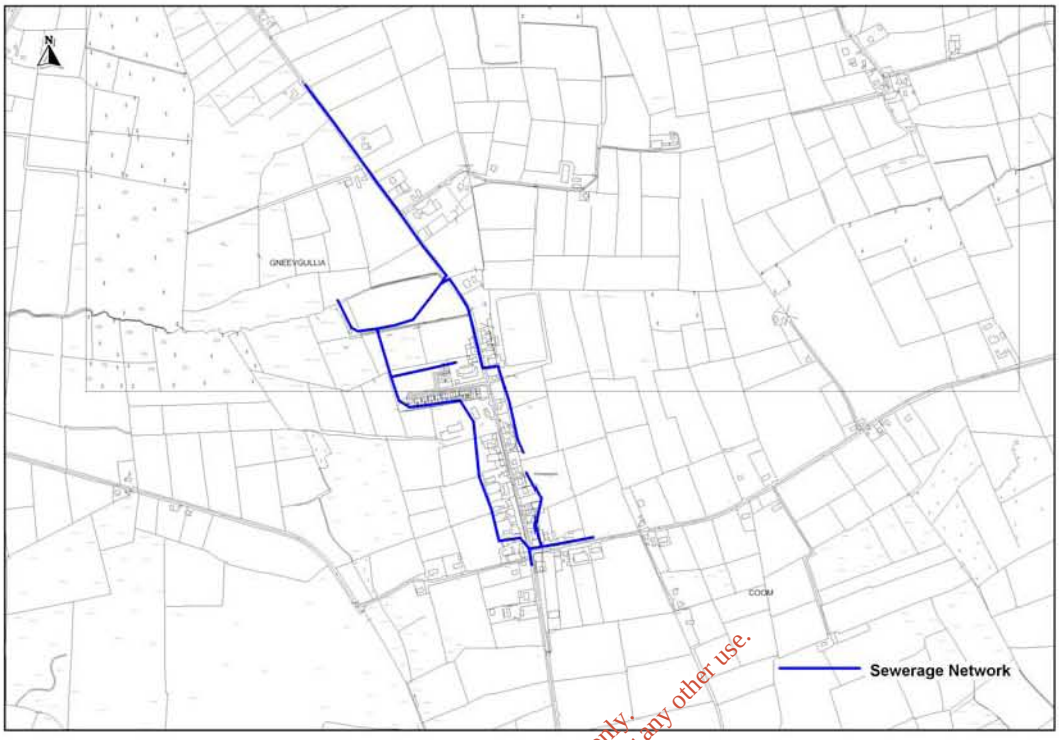
Figure 10.2: Existing Collection System



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10.2.2 Existing Wastewater Treatment Plant

Wastewater treatment is provided by an extended aeration plant located to the northwest of the village, constructed in 1981. Kerry County Council report that design capacity of the treatment plant is 550pe, and that it is currently operating within this capacity.

Primary treatment is provided by a coarse bar screen and grit removal channel, both of which require manual cleaning. There are no automatic influent flow measurement or sampling facilities.

An oxidation ditch with brush aerator, followed by clarification, provides secondary treatment. Sludge is pumped to four recently constructed reed beds, which are being piloted to see if they can provide a significant reduction in the volume of sludge to be taken off site.

Effluent is discharged overland through what appears to be a stone filled ditch to a nearby watercourse, a tributary of the Quagmire River. Consequently, there are no automatic effluent flow measurement or sampling facilities.

The treatment works site is located in a secluded area a distance from the public road. A new housing development is under construction on lands adjacent to the site on the eastern side. The site is comfortably sized, but there is no room within the current site boundary for extension of the treatment works.

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The plant and its elements are in reasonable condition, and the scheme caretaker reports that he encounters little difficulty in the day-to-day operation of the plant. There are however a number of issues that need to be addressed, such as:-

- The entrance to the plant is via a track that is shared with a local farmer. Gates at the head of the entrance have been taken down, while the gates to the treatment plant have been damaged and cannot be fully opened in safety. Both gates need to be repaired.
- Automatic effluent flow measurement and sampling facilities should be installed.
- Mechanical grit classifier and screen rakes should be installed at the inlet works.
- Final effluent should be piped to the receiving watercourse.

Kerry County Council are in the process of providing influent and effluent flow and load data, which will be incorporated in a later revision of this document.

10.3 FUTURE POPULATION & DRAINAGE AREAS

10.3.1 Population Projections

The permanent population in Gneeveguilla recorded in the 2006 Census was 233, which equates to 85 permanent residences, assuming an occupancy rate of 2.75 persons/house.

Based on the 2008 An Post GeoDirectory, there are an estimated 98 residential properties within village development boundary established in the 2008 Local Area Plan for the village. It is assumed that there are no holiday/second homes in Gneeveguilla, and that the additional 13 houses shown in the 2008 Geodirectory over the estimated number from the 2006 census is explained by the subsequent completion of a number of developments in the town. On this basis, the current population of Gneeveguilla may be as high as (98 x 2.75=) 270 people.

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Applying an allowance of 20% of the domestic population, as the contribution of non-domestic results in a current (2008) design population equivalent of (270 x 1.2 =) 324pe. This suggests that the plant is operating at 59% of its reported capacity.

The population of Gneeveguilla is projected to increase by 165 people to 2028 (Ref. Appendix 1 – Population Forecast), to give a future (2028) permanent population of 435 people. At an assumed future occupancy rate of 2.4, this implies there will 181 permanent residential properties in the village, an increase of 96 over the current figure.

However, planning permission has been granted for the development of 32 residential properties to the south of the village (Planning Refs. 079417 and 08677) and a further 16 units near the village centre (Planning Ref. 06447).

It is, therefore, proposed that a 2028 permanent housing stock of (181 + 32 + 16 =) 229 units is allowed for, which at an assumed occupancy rate of 2.4 gives a future (2028) permanent population of 550 people.

Applying an allowance of 20% of the domestic population, as the contribution of non-domestic results in a future (2028) design population equivalent of (550 x 1.2 =) **660pe.**

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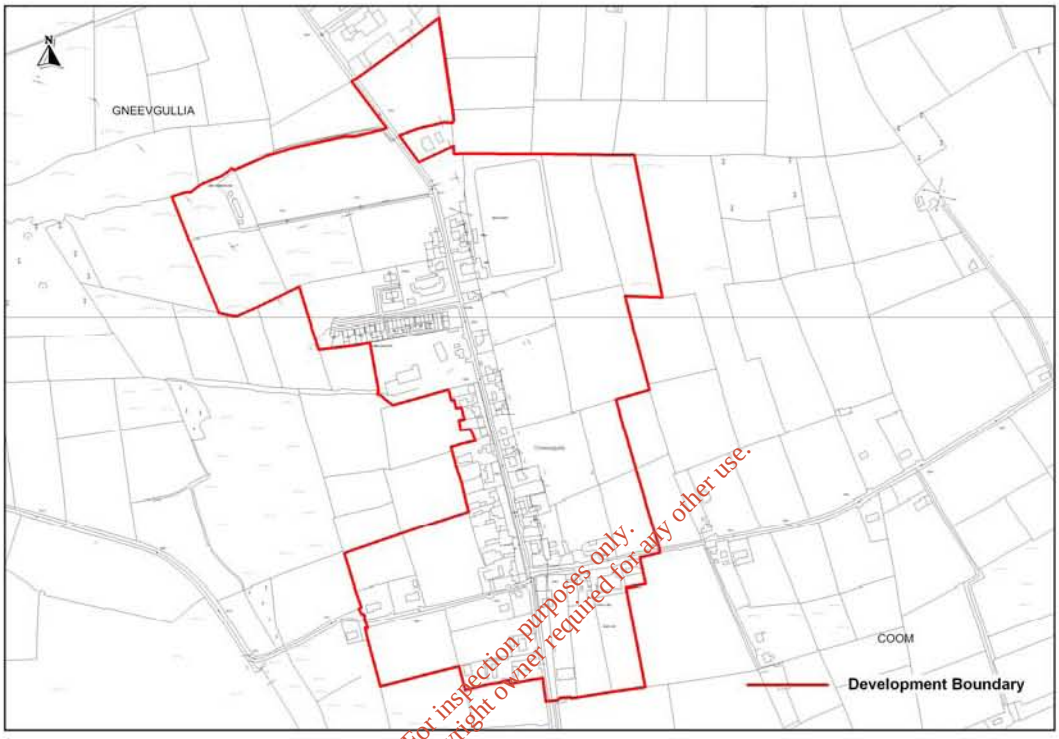
10.3.2 Development Area

The Gneeveguilla Local Area Plan identifies a development area of 30.3ha for Gneeveguilla, the boundary of which is shown in Figure 10.3. It also provides a number of sites for permanent residential development, totalling 9.2ha.

Figure 10.3: Gneeveguilla Development Boundary



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Guidelines for Planning Authorities on Residential Density" published by the DEHLG states that *"In greenfield sites or those sites for which a Local or Action Plan is appropriate, public open space should be provided at a minimum rate of 15% of the total site area. This allocation should be in the form of useful open spaces within residential developments and, where appropriate, larger neighbourhood parks to serve the wider community".* Hence it is assumed that 15% of the areas detailed above will be provided for open/amenity space, leaving (9.2/1.15=) 8ha available for development. At an assumed average development density if 15 units/ha, this could provide an additional 120 permanent residences.

The capacity of the lands zoned for residential development in Gneeveguilla to accommodate the projected population growth within the development boundary to 2028 is assessed in Table 10.1.

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Table 10.1: Capacity of Zoned Residential Land in Gneeveguilla to Accommodate Projected Growth

Projected future permanent population	A	550	Persons
Current permanent housing stock (incl. units with planning)	B	146	Units
Assumed future occupancy rate	C	2.4	Persons/unit
Future population to reside in current housing stock	D=BxC	350	Persons
Future population for which new housing is required	E=A-D	200	Persons
Additional houses required at assumed future occupancy rate	F=E/C	83	Units
Additional houses available from full development of zoned land	G	120	Units
Redundancy Factor	H=G/F	**1.45**	

Table 10.1 shows that the current area of land zoned for residential development has almost 1.5 times the capacity required to provide for the projected population growth within the development boundary (280 people) to 2028.

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10.4 PROPOSED NETWORK

10.4.1 Foul Sewer Network

The topography of the village generally slopes from southeast to northwest through the village.

The existing network consists of some 150 mm diameter pipes, which are generally deemed inadequate in a public system. It is therefore proposed that approximately 343m of 150mm diameter sewer in Gneeveguilla will be upsized to 225mm diameter sewer.

Within the village it is proposed to provide an additional 133m of new 225mm diameter foul sewers to service zoned lands, gravitating to two pumping stations to the south and the southwest of the village. From both pumping stations, wastewater will be pumped approximately 140m to a header manhole on the existing gravity collection system.

A CCTV survey is required to assess the condition of the existing network and identify any remedial works that may be necessary. For the purposes of this study it is assumed that 15% of the existing 225mm and 300mm diameter sewers will need remedial work, based on experience of similar networks. Associated costs are included in the estimated costs for the scheme detailed in Table 10.4.

10.4.2 Storm Sewer Network

Section 5.3(f) of the Brief identifies the need to “provide for foul sewage and storm drainage collection systems as separate systems to the greatest extent practicable“. Solely providing a foul network will not meet this criterion and will in time, it is suggested, result in a combined system.

Consequently it is proposed to provide a separate storm network to cater for runoff from impermeable areas within the development boundary.

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The following Lloyd Davies formula was used to calculate the run off from the area in question.

Q = 2.78 Ap I

Where: Q =run off in litres/sec
Ap=impervious area in hectares.
I = rainfall intensity in mm/hr.

A rainfall intensity of 50mm/hr was applied, and an impermeability factor of 0.35 was assumed.

The area enclosed by the development plan boundary for Gneeveguilla is approximately 30.3 ha, and the calculated run off from this area using the above formula is calculated to be 1,474 l/s.

To cater for runoff from lands within the development boundary, the following storm collection system is proposed.

Table 10.2: Proposed Storm Sewer Network

Pipe Diameter (mm)	Location	Length (m)
225	Road	918
525	Road	412
600	Road	506
Total Length		**1,838**

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It is proposed to discharge surface water collected within the village to a land-drain, which drains to a nearby watercourse, a tributary of the Quagmire River.

10.5 PROPOSED TREATMENT WORKS

10.5.1 Introduction

The existing treatment plant has a design capacity of 550pe, while the future (2028) design population for Gneeveguilla is estimated as 660pe. It is therefore proposed to allow for additional aeration and settling capacity. This will require an extension of the treatment plant to the west, for which provision has been made in the Local Area Plan for the village.

Assuming a linear growth in population between 2008 and 2028, the additional capacity will be required by 2023.

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10.5.2 Wastewater Treatment Load

The design criteria for the proposed treatment in Gneeveguilla are set out in Table 10.3 below.

Table 10.3: Design Criteria for Proposed Treatment Plant

Parameter	Unit	Design Criteria
Population Equivalent	nr	660
Per capita flow	l/c/d	180
Dry Weather Flow	m^3/d	119
Flow to Full Treatment 3DWF	m^3/d	356
BOD Load per Capita	kg/c/d	0.06
BOD Load per Day	kg/d	39.6

10.5.3 Details of Proposed Wastewater Treatment Plant

The existing treatment plant at Gneeveguilla discharges to a local unnamed stream, a tributary of the Quagmire River. The following legislation was considered in establishing the proposed discharge standards for the future WwTP and the suitability of the existing discharge location:-

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- Neither the unnamed stream nor the Quagmire River is designated "sensitive" under the Third Schedule to the Urban Waste Water Treatment Regulations 2001(SI No 254 of 2001). The Regulations specify that discharges from agglomerations with a population equivalent of less than 2,000 to freshwater and estuaries shall be subject to "appropriate treatment". This is defined as " treatment of urban waste by any process and or disposal system, which after discharge allows the receiving water to meet the relevant quality objectives and the relevant provisions of the directive and of other community directives".

- The Local Government (Water Pollution) Act, 1977 (Water Quality Standards For Phosphorus) Regulations, 1998 (SI No. 258 of 1998) oblige local authorities to maintain or improve the water quality of rivers by 2007 by reference to the Q-Rating (biotic index) or the concentration of molydbate reactive phosphate (MRP). These Regulations apply to the unnamed stream

- Neither the unnamed stream nor the Quagmire River are a designated salmonid river under the EC (Quality of Salmonid Waters) Regulations 1988 (SI No. 293 of 1988).

- Neither the unnamed stream nor the Quagmire River are a designated bathing water under the Quality of Bathing Waters Regulations 1992 (SI No. 155 of 1992) and subsequent amendments – (SI No. 145 of 1994, SI No. 230 of 1996, SI No. 177 of 1988 and SI No. 22 of 2001).

- The EC (Quality of Shellfish Waters) Regulations 2006 (S.I. No. 268 of 2006) do not apply to the proposed discharge.

It is projected that additional treatment capacity will be required in Gneeveguilla by 2023. It is therefore proposed to duplicate the existing treatment works to provide an additional 550pe, bringing the overall plant capacity to 1,100pe.

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Doubling the treatment plant capacity may seem excessive with respect to the projected 2028 design population equivalent. However it is considered prudent in terms of the anticipated design life of the works proposed (e.g. reinforced concrete tanks 5-60 years, M&E works 10-15 years). Assuming a linear increase in load beyond 2026, duplication of the existing works would ensure that the plant would have sufficient capacity up to 2045.

In order to determine the suitability of the stream for discharges from the future WwTP it will be necessary to complete a waste assimilative capacity assessment at the proposed point of discharge. This requires water quality data, which is currently unavailable. Consequently we will complete an assessment based on available dilution at the 95-percentile flow.

As there is no flow data available for the stream, an estimate of the dry weather and 95-percentile flows must be made. An assessment of the OSI 1:50,000 mapping suggests the catchment area to the discharge point is approximately 0.53km². Typically, a specific dry weather run-off of greater than 1l/s/km² would be expected, but this figure can be applied to give a conservative estimate of the dry weather flow at the discharge point, calculated as 0.53l/s. Typically, the 95-percentile flow would be in the order of twice the dry weather flow, or 1.06l/s.

Memorandum No. 1 “Water Quality Guidelines” 1978 recommends that the BOD of receiving water should not be increased by more than 1mg/l. The estimated current and ultimate design DWF from the treatment plant are 0.68l/s and 2.29l/s respectively. Hence the available dilutions at 95-percentile flow are (1.06/0.68 =) 1.6 and (1.06/2.29 =) 0.5 respectively. Both are significantly less than the 25 required to limit the increase in BOD in the receiving water to less than 1mg/l. This suggests that the receiving water does not have the required assimilative capacity at the existing discharge point, given the current level of treatment employed.

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In order to provide the required dilution factor of 25 at the proposed ultimate treatment capacity, a 95-percentile flow of (25 x 2.29l/s =) 57.25l/s is required. Assuming a specific 95-percentile run-off of 2l/s/km², the catchment area to the point of discharge must be greater than (57.25 / 2=) 28.63km².

The catchment area of the unnamed stream to its confluence with the Quagmire River is approximately 3.2km². Furthermore, the catchment area of the Quagmire River is less than that required until 2km downstream, following the confluence with another tributary in Scrahanaveal townland. The catchment area at the confluence is 30.8km². It would be necessary to construct approximately 3.6km of 225mm diameter outfall in fields to discharge at this location.

Therefore for the purposes of this assessment it is assumed that the existing oxidation ditch and clarifier will be duplicated to increase the secondary treatment capacity of the plant to 1,100pe and that a new 3.6km 225mm diameter outfall to the Quagmire River will be provided.

In addition it is assumed that new inlet works will be provided, including mechanical grit classifiers and screen rakes, and that inlet and outlet flow and automatic sampling facilities will be provided. As there are no storm water overflows in the network, the new inlet works should also include an overflow to a storm water holding tank, designed to provide 2-hour retention at 3DWF. Associated costs are included in the estimated costs for the scheme detailed in Table 10.4.

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The European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003), giving effect to the EU Water Framework Directive 2000/60/EC, require public authorities to establish an integrated monitoring and management system for all waters, to develop a dynamic programme of management measures and to produce a River Basin Management Plan. This requirement is being implemented through the establishment of river basin management projects for River Basin Districts, of which there are eight in Ireland. The Quagmire River is within the South Western River Basin District (SWRBD). The Management System for SWRBD is currently under development and no standards have yet been prescribed.

It is intended that a Draft River Basin Management Plan be released for public consultation in 2008, but to date this has not been published. When agreed, the Plan and its associated Programme of Measures may have an impact on the eventual discharge standards specified for the WwTP at Gneeveguilla.

10.5.4 Sludge

It is proposed to incorporate a sludge thickener into the treatment works, which will assist the sludge to thicken to 3% dry solids, designed for an ultimate load of 1,100pe. The sludge production from the projected future (2028) design population 660pe is estimated as **1.2m^3/day**, based on a 95% BOD removal efficiency and 1 Kg of dry solids /kg BOD removed

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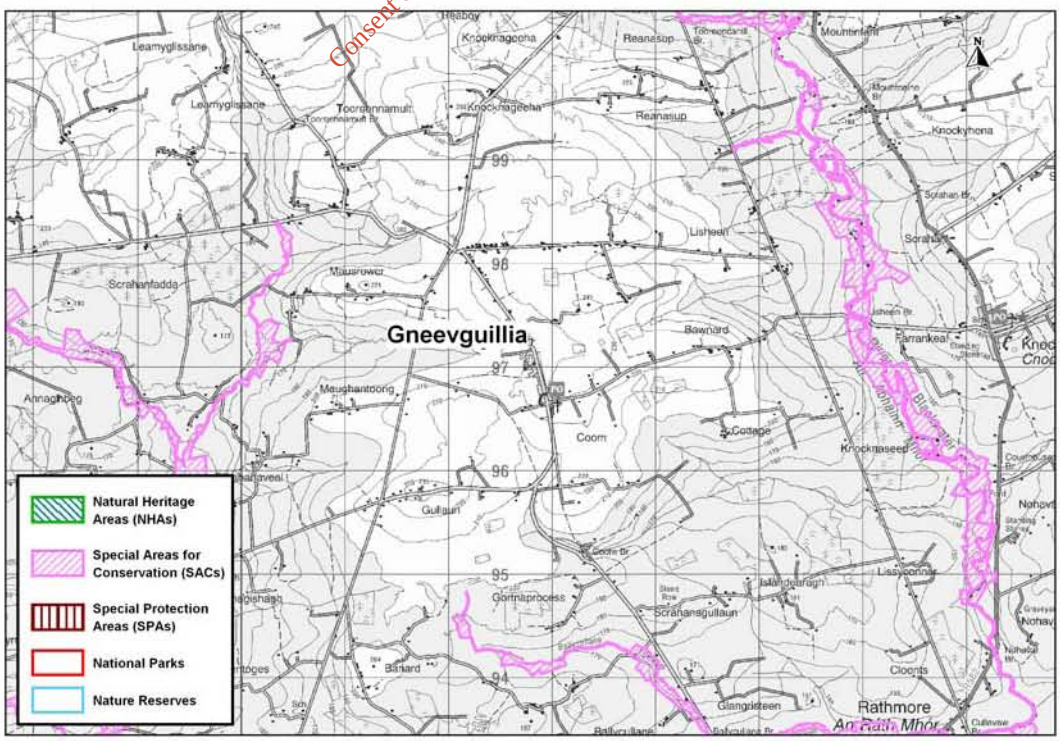
10.5.5 Proposed National Heritage Area

As can be seen from Figure 10.4 the Quagmire River forms part of the Killarney National Park, Macgillycuddy's Reeks, and Caragh River Catchment Special Area of Conservation (Site Code 000365).

Figure 10.4: Special Protection Area at Gneeveguilla



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10.6 COSTS

With reference to the preceding sections the costs of the recommended works is summarised in Table 10.4 as follows:

Table 10.4: Summary of Estimated Costs

Description					Estimated Costs (€)
Foul Collection Network					207,916.50
Pipe size	**Location**	**Length**	**Unit Cost**	**Total Cost**	
100	Road	140	€150	€21,000	
225	Road	343	€170	€58,310	
Remedial Works		317.85	€90	€28,607	
Pumping Station		2 No.	€50,000	€100,000	
Total Foul Collection Network Cost				€207,917	
Storm Collection Network					353,900.00
Pipe size	**Location**	**Length**	**Unit Cost**	**Total Cost**	
225	Road	918	€170	€156,060	
525	Road	412	€210	€86,520	
600	Road	506	€220	€111,320	
Total Storm Collection Network Cost				€353,900	
Sub-Total					**561,816.50**
WwTP (Secondary treatment duplication (550pe), and plant improvements)					597,500.00
3.6km of 225mm diameter outfall, in fields					576,000.00
Sub-Total					**1,735,316.50**
Preliminaries (15%)					260,297.48
Sub-Total					**1,995,613.98**
VAT @ 13.5%					269,407.89
Estimated Total Contract Cost					**2,265,021.86**
Land Acquisition Cost					186,000.00
Non Contract Costs					339,753.28
Estimated All In Capital Costs					**2,790,775.14**

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The estimated all-in capital cost for the proposed scheme is **€2,790,775.** This equates to a unit cost of €2,790,775/98= €28,477 per existing domestic connection and €2,790,775/229 = €12,187 per projected 2028 domestic connection.

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List of Drawing Numbers

EPA No	Description	Ref
B.1-D01	Gneeveguilla Agglomeration (Discovery)	Section B1
B.1.-D02	Gneeveguilla Agglomeration (Vector)	Section B1
B.1-D03	Waste Water Works	Section B1
B.2-D04	Location of Waste Water Treatment Plant	Section B2
B.2-D05	Layout of Waste Water Treatment Plant	Section B2
B.3-D06	Location of Primary Discharge	Section B3
B.5-D09	Location of Stormwater Overflow	Section B5
C.1-D07	Layout of Waste Water Treatment Plant	Section C1
C.1-D08	Flow Diagram of Waste Water Treatment Plant	Section C1

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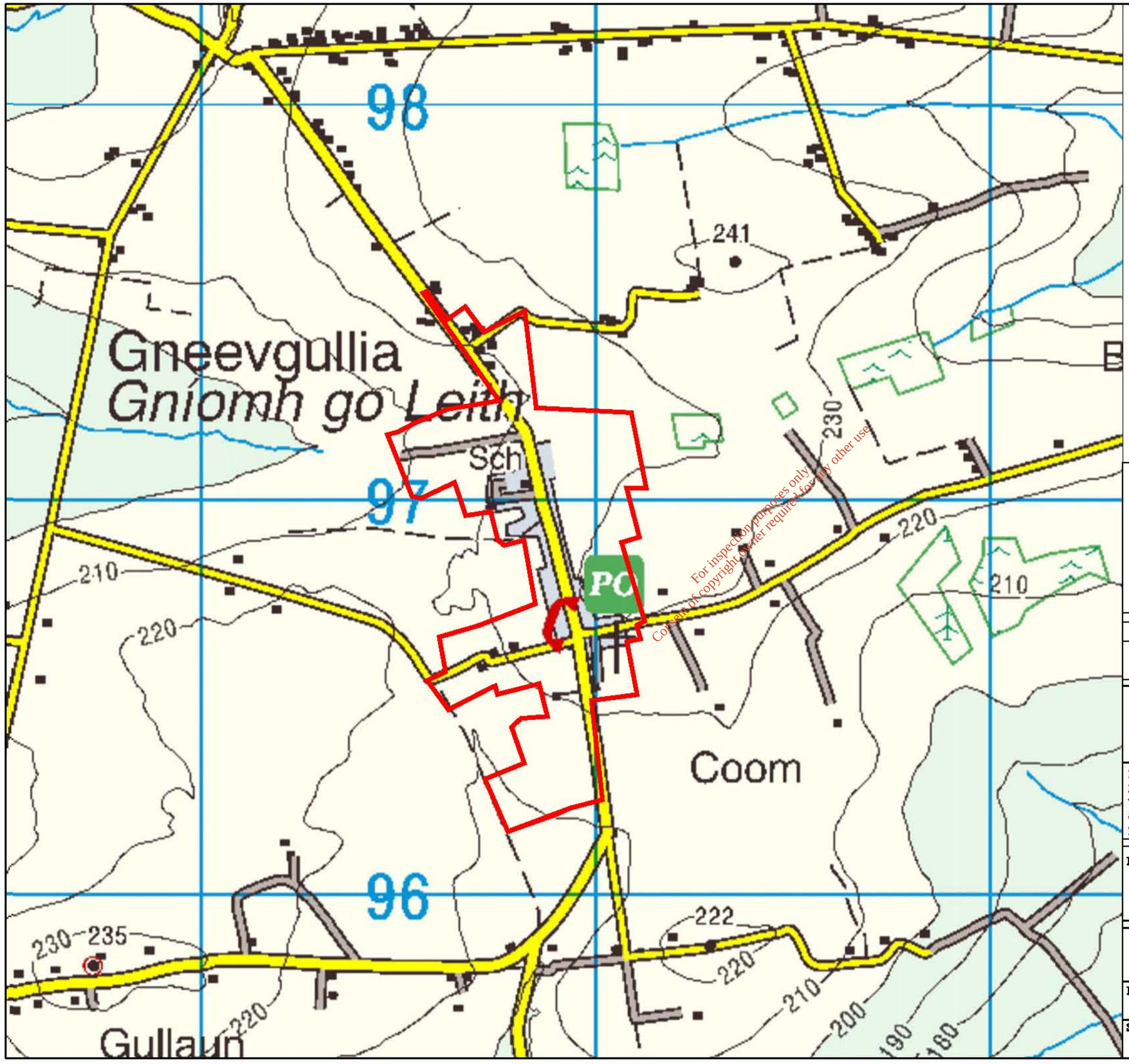

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Project

WASTE WATER DISCHARGE LICENCE
APPLICATION FOR GNEEVENGULLA
WASTE WATER TREATMENT PLANT

Title

GNEEVENGULLA AGGLOMERATION DISCOVERY

Drawn	Designed	EPA No.	Date
		B.1,–D01	07/12/2009.
Scales		K.C.C. Drawing No.	
1/10000.		W/09/501.	

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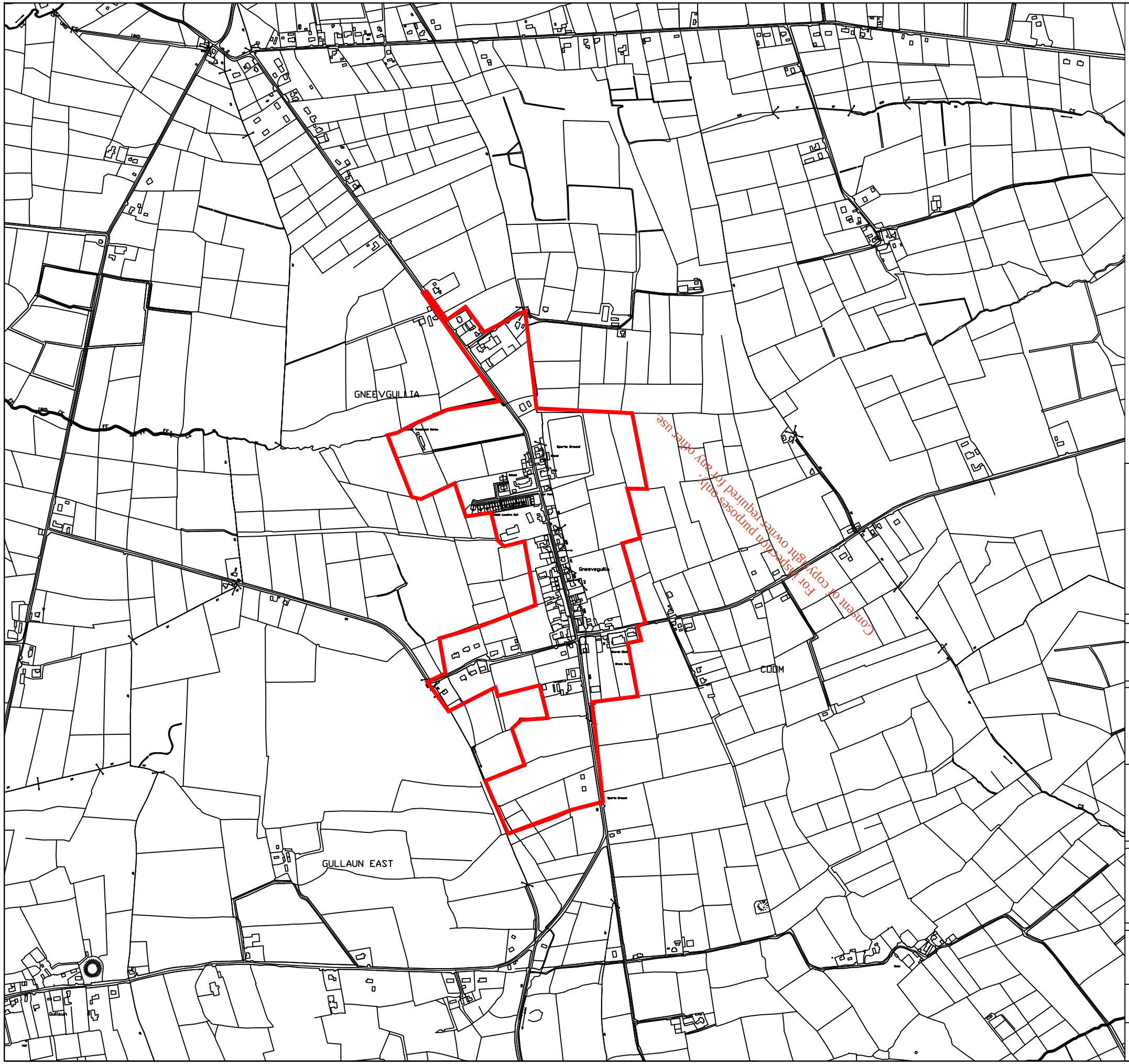

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GNEEVENGULLA AGGLOMERATION VECTOR

Drawn	Designed	EPA No.	Date
		B.1,–D02	07/12/2009.
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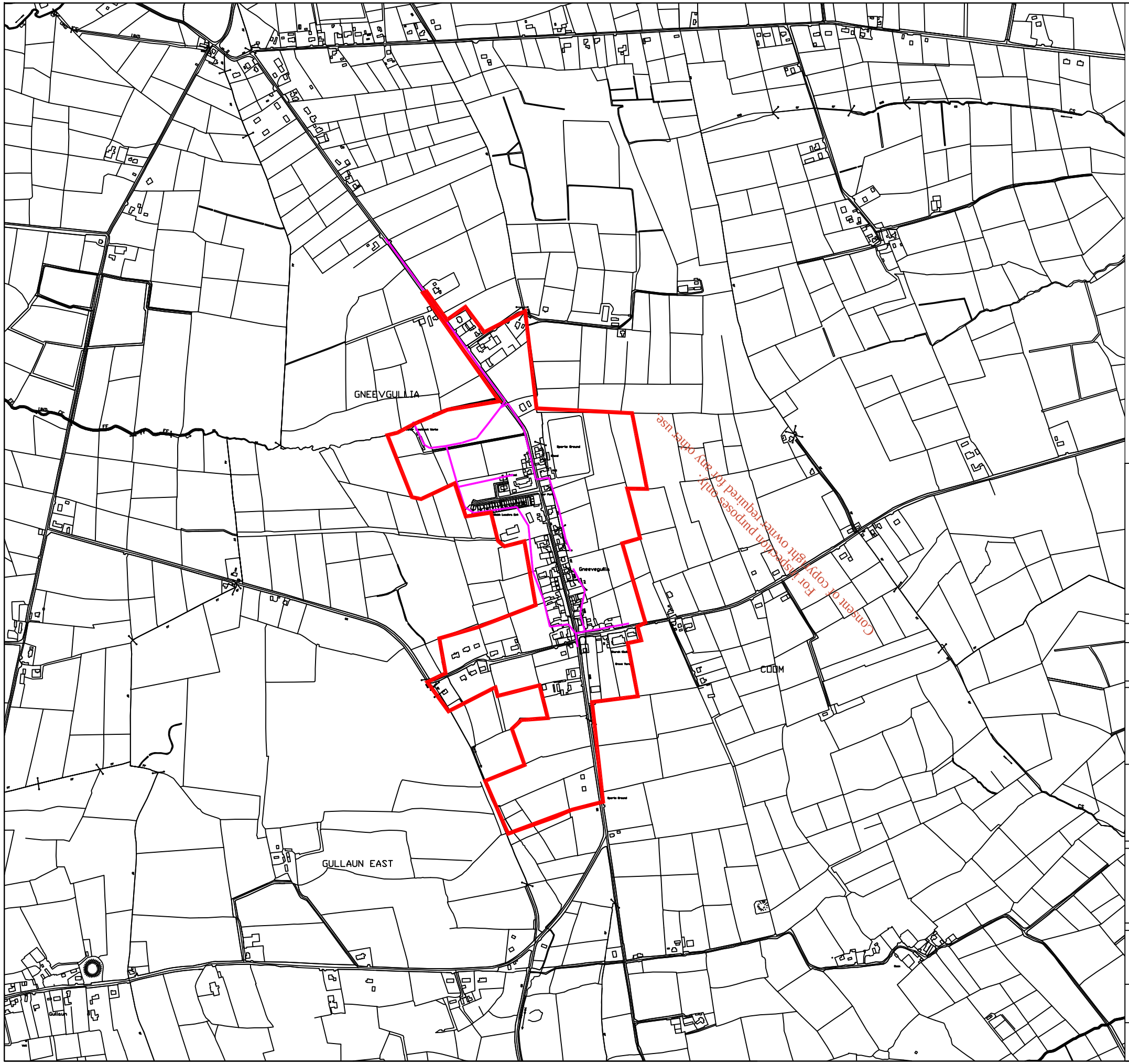

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WASTE WATER NETWORK

Drawn	Designed	EPA No.	Date
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1/10000.		W/09/503.	

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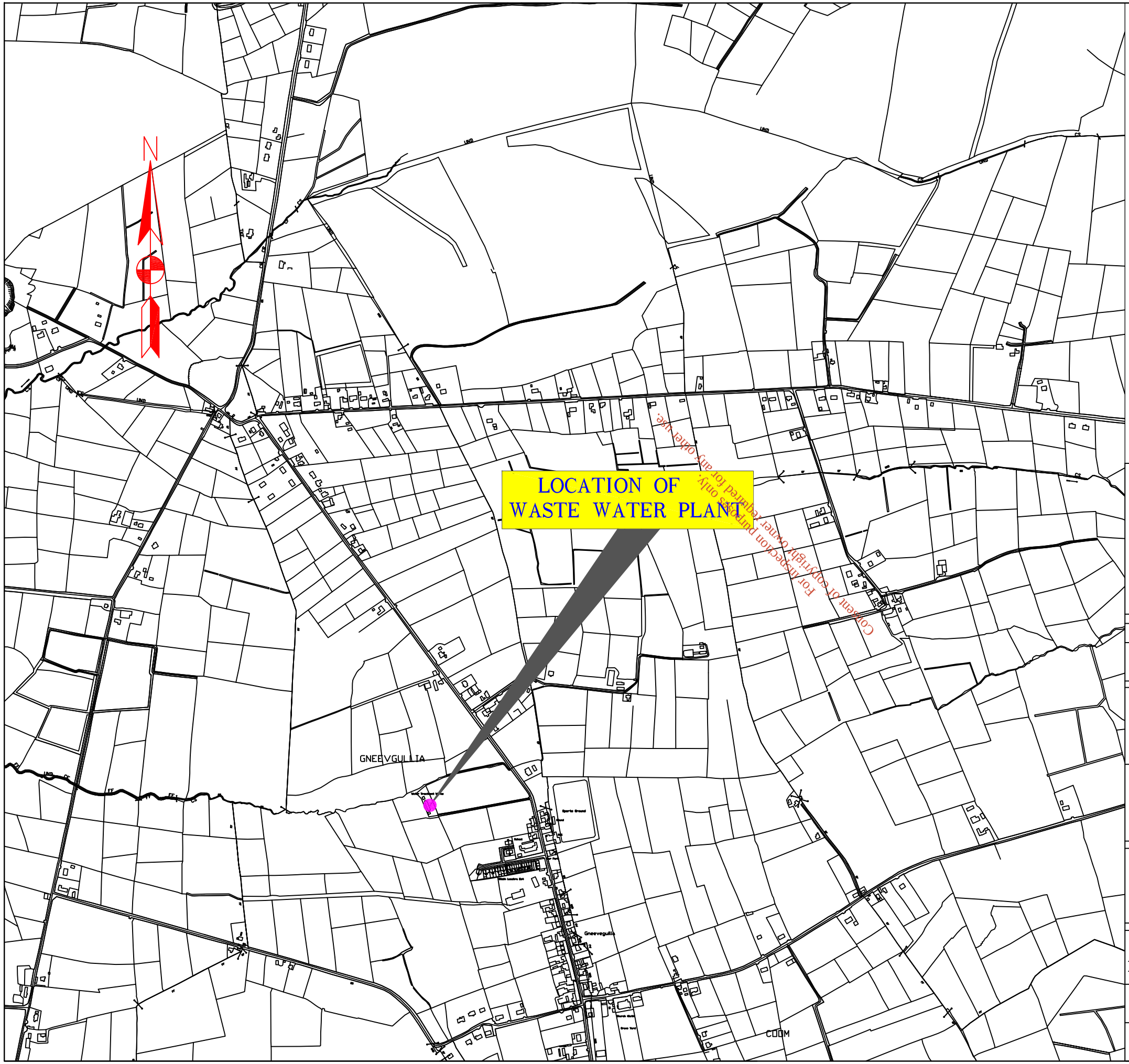

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LOCATION OF WASTE WATER TREATMENT PLANT

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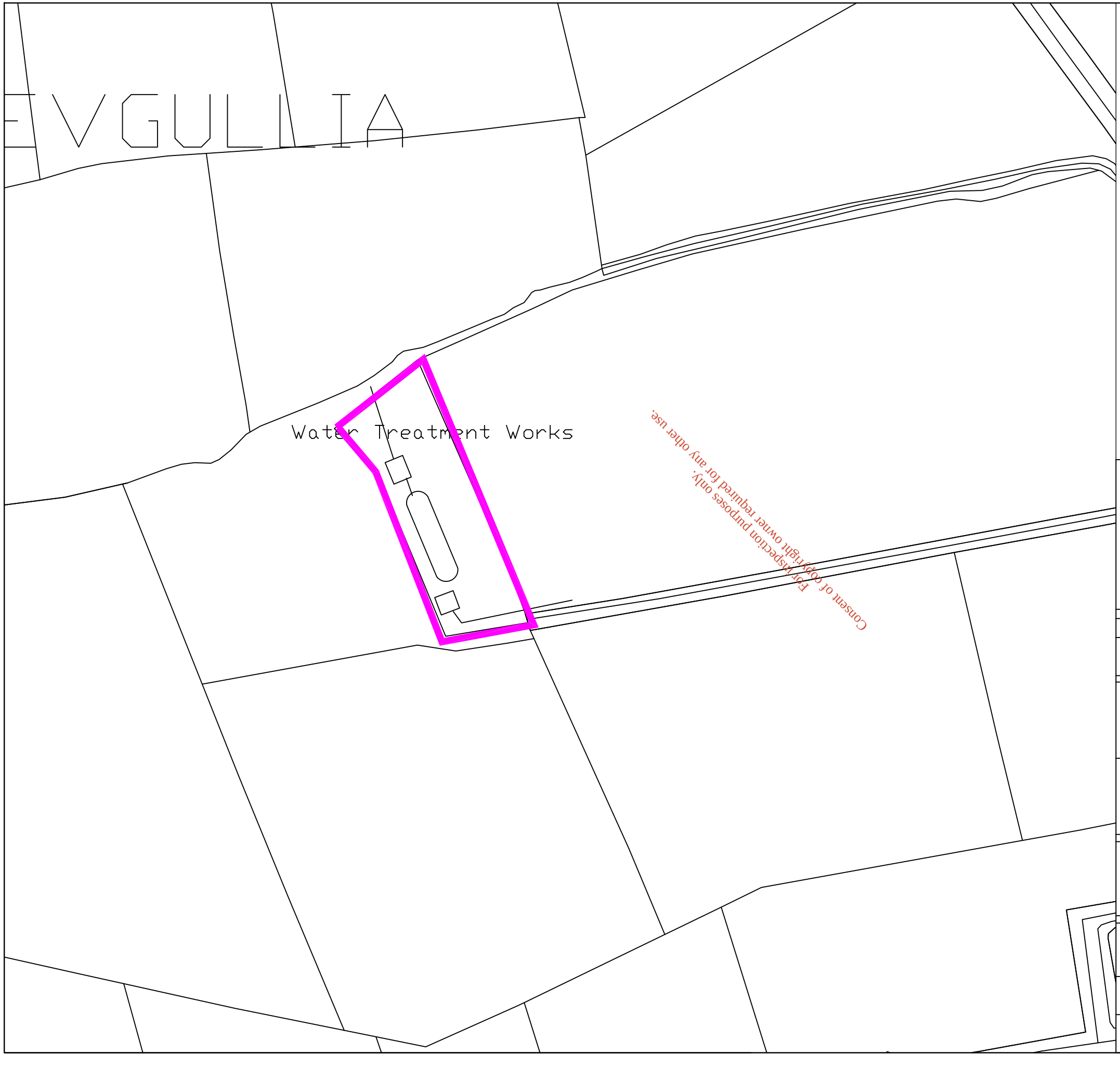

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LAYOUT OF WASTE WATER TREATMENT PLANT

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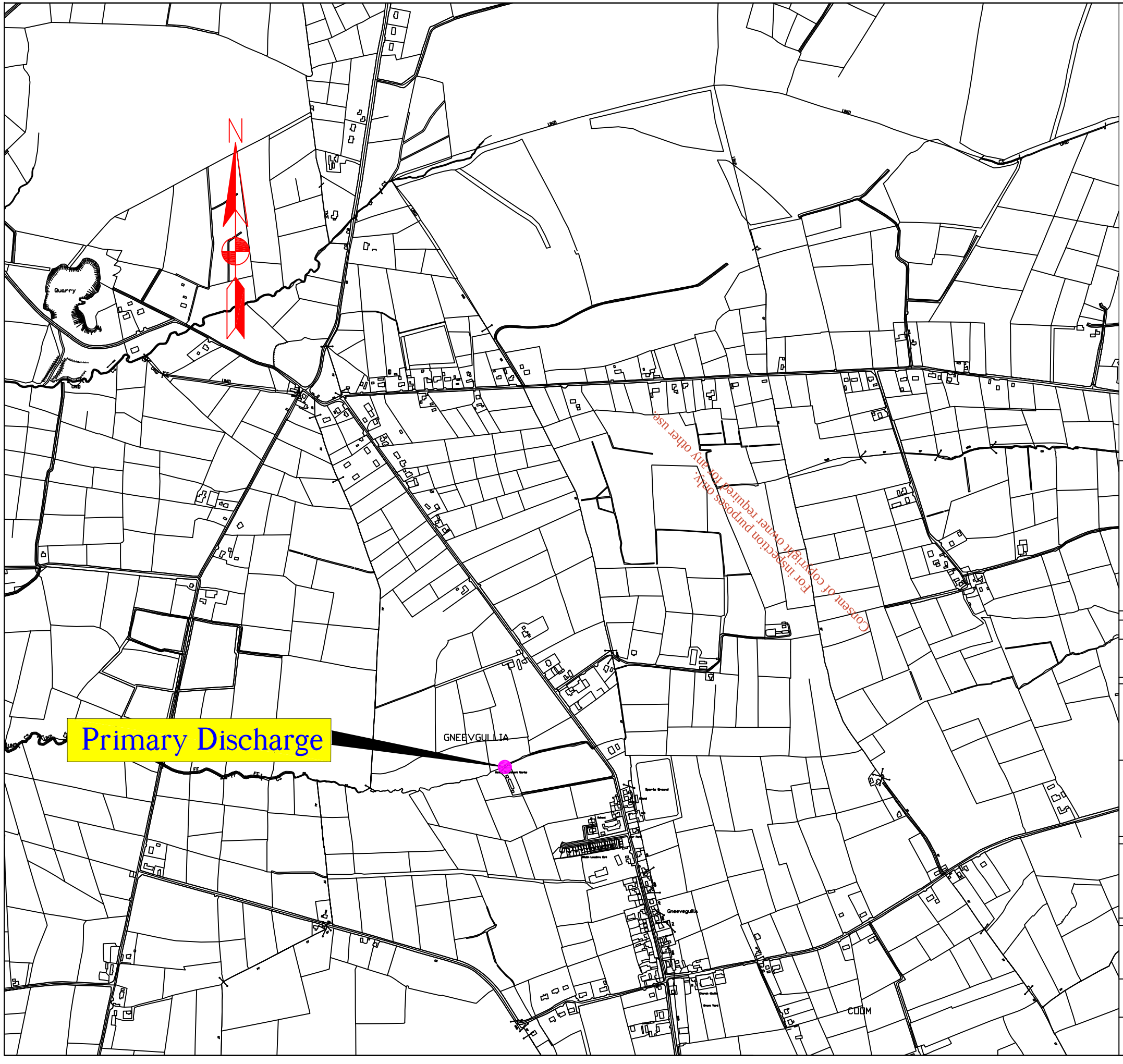

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Title

LOCATION OF PRIMARY DISCHARGE

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		B.3,–D06	15/12/2009.
Scales 1/10000.		K.C.C. Drawing No. 6/09/504.	

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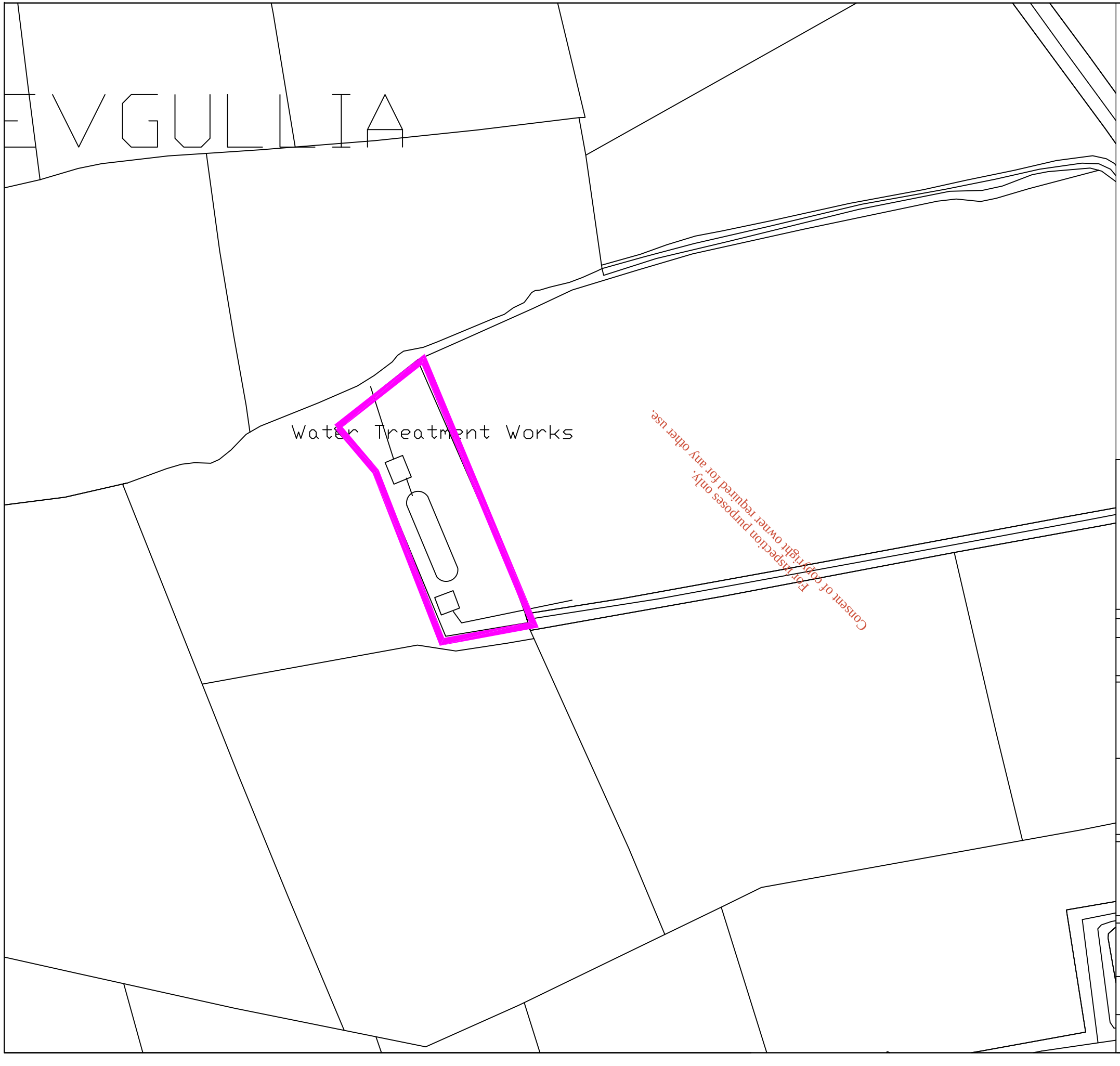

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LAYOUT OF WASTE WATER TREATMENT PLANT

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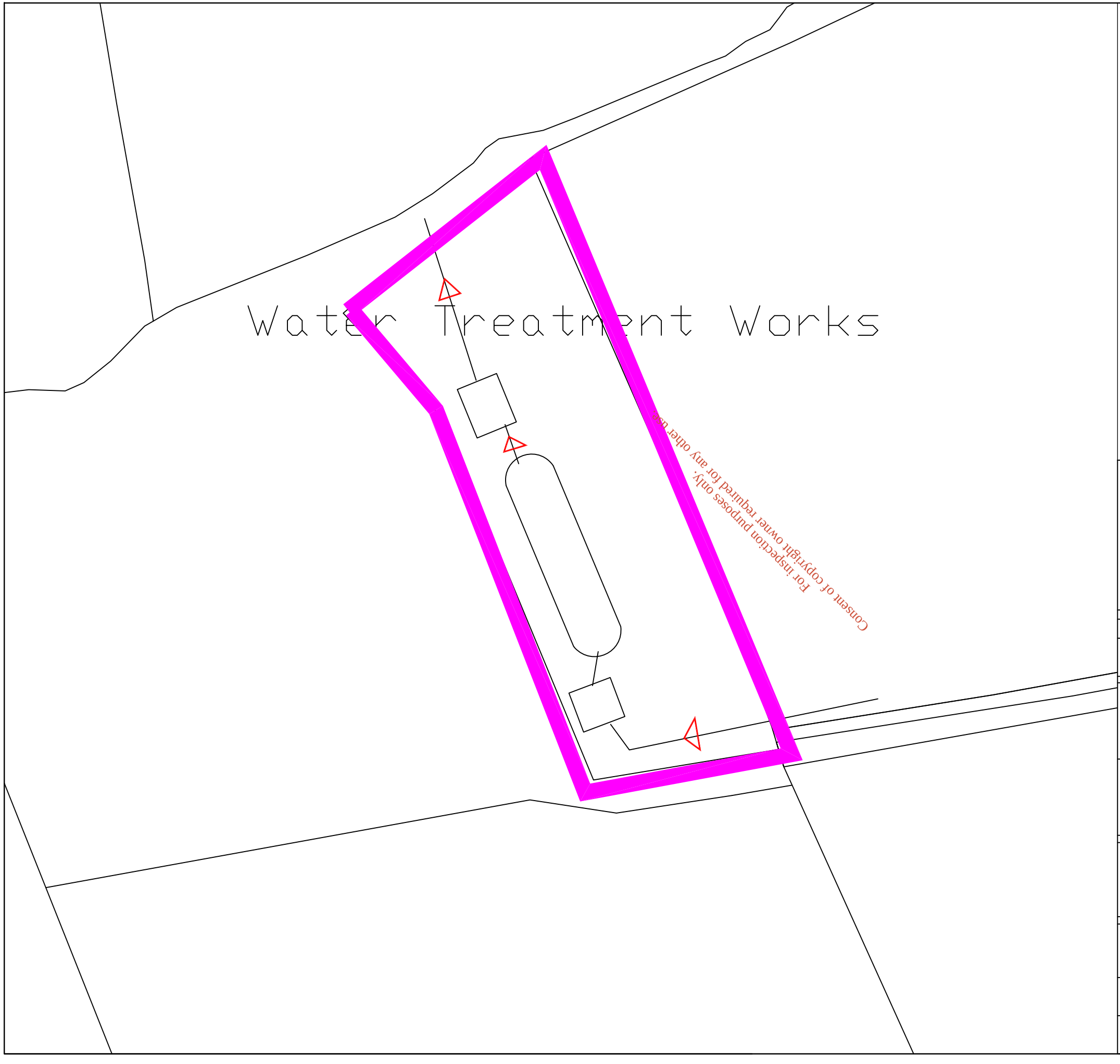

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Title

FLOW DIAGRAM OF
WASTE WATER TREATMENT PLANT

Drawn	Designed	EPA No.	Date
		C.1,–D08	15/12/2009.

Scales	K.C.C. Drawing No.
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Chuig/ Clr. Michael Healy-Rae, Méara Chontae Chiarraí

Chuig/ Gach ball de Chomhairle Chontae Chiarraí

Report on proposed Village Sewerage Schemes Programme

There is an urgent need to provide new or upgraded sewerage schemes for most of the villages in Kerry, both for environmental reasons and to support the sustainable development of the villages in line with the policies of the County Development Plan. Five projects are already under construction (Milltown, Firies, Barraduff, Kilcummin and Sneem) and design reports and costings are being completed for 29 more.

Most of the schemes are included in the current Water Services Investment Programme (WSIP) to go to construction or to enter the planning phase, including Barraduff and Kilcummin. However, some very urgent schemes are not included in the WSIP while many of those which are included are not considered to be in the top priority category.

An investment of over €70 million will be required to deliver all the required schemes with up to 50% of the cost of some schemes having to be funded by Kerry County Council. There would be huge logistical problems in attempting to deliver 29 further schemes quickly and simultaneously, as well as funding difficulties. Therefore, it is necessary to prioritise and phase the delivery programme in order to draw down Department funding effectively and to deliver schemes as quickly as possible.

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It is proposed that a submission be made to DEHLG to include a reprioritised list of schemes in the forthcoming revision of the WSIP.

Phase 1 Schemes

Nineteen villages which are most urgent for environmental and developmental reasons, and which are likely to be more economic to fund, are included in Phase 1.

Abbeydorney	Beaufort	Finuge	Milltown
Annascaul (WWTP)	Caherdaniel	Fieries	Lixnaw
Ardfert	Castlegregory	Glenbeigh	Sneem
Ballyduff	Castlemaine	Kilflynn	Tarbert
Ballylongford	Fenit	Kilgarvan	

Substantial progress has been made in advancing these village schemes but it is vital that funding be secured through the WSIP and through Development Levies if they are all to be constructed in good time.

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Progress to Date:

- Construction has started on 3 schemes (Fieries, Milltown and Sneem)
- Preliminary Reports are now complete for the other 16 schemes and will be sent to the Department of Environment, Heritage and Local Government by 20th July
- Site Investigation contracts are complete or substantially complete for 14 schemes.
- Site acquisitions for new treatment plants are completed for 2 schemes; are well advanced for 9 schemes; and are difficult for 3 schemes.
- Part 8 notices will be published for 16 schemes on 18th July.
- Consulting Engineers are being instructed to prepare Tender Documents for 16 schemes with a view to proceeding to tender in late 2007. Note that the actual tender date of projects is dependent on sites being acquired. The projects would be delayed if Compulsory Purchase Orders were required.

Phase 2 Schemes

There are 13 schemes proposed for Phase 2 of the Programme. Some of these schemes could advance rapidly to construction in partnership with suitable developers.

Annascaul (pipelines)	Brandon	Cromane	Scartaglin
Asdee	Cashen	Currow	Spa
Aughacasla	Chapeltown	Glenflesk	The Glen
Boolteens			

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- Preliminary Reports are being compiled and printed for all schemes and will be sent to the Department of Environment, Heritage and Local Government by 3rd August.
- Quick progress on Phase 2 schemes will depend on affordability issues and especially on the level of D.E.H.L.G. funding.
- The Preliminary Reports will provide scheme templates which can be used in any discussions with developers who would be willing to make realistic contributions towards funding or to provide elements of schemes. The Serviced Land Initiative (SLI) scheme could be useful in this context.

Other Villages

As well as the 33 village schemes discussed above, a further 16 village scheme upgrades were included in the Assessment of Needs (2006) which was adopted by the Council last year. It is hoped that these schemes will be included in the forthcoming revision of the WSIP as schemes to enter planning. The villages are:

Baile an Fheirtéaraigh	An Clochán	Knocknagoshel
Baile na nGall	Duagh	Moyvane
Baile an Sceilg	An Fheothanach	An Mhuiríoch
Brosna	Gneeveguilla	Portmagee
Causeway	Kilfenora	
Ceann Trá	Knightstown	

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In any case, the Water Services Department would carry out interim upgrades for schemes where developments would warrant this.

Any remaining villages and development nodes will be examined in the forthcoming Kerry Wastewater and Sludge Project Strategic Study and the most suitable and effective infrastructural solutions will be identified.

Funding:

The challenge for Kerry County Council will be to finance the shortfall which will arise after the DEHLG funding element is accounted for. The shortfall could vary from say, 40% in a small number of schemes, to 60% for Serviced Land Initiative (SLI) funded schemes.

The shortfall will need to be funded almost entirely from development levies. At present, there is a countywide General Development Levy for sewerage of €3,020 per house. On top of this levy, there is an additional Special Development Contribution levy of €1,910 for the "fast-track" schemes of Milltown, Firies, Barraduff and Kilcummin and €4,000 for Tarbert.

The current best estimates available indicate that the funding shortfall could be over €8,000 per new house equivalent for Phase 1 schemes and could be over €12,000 per house in Phase 2 schemes. The Council should note that these figures mean that the development levies for sewerage must be increased if the Village Sewerage Scheme programme is to be delivered in a reasonable timescale.

It is intended to bring proposals to the Council for a revised sewerage Development Levy scheme for the Phase 1 villages at the September meeting.

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Conclusion:

A new comprehensive, phased programme to deliver 32 new and improved Village Sewerage Scheme is proposed.

The support of the Council is sought

- for the revised Village Sewerage Scheme Programme to be submitted to DEHLG for inclusion in the Water Services Investment Programme
- for a limited revision of the sewerage Development Levy scheme which would fund targeted elements of the Village SS Programme

The Council's support is necessary enable the Water Services Section to progress these schemes to construction and to maximize the National Development Plan funding for the proposed Programme.

O.Ring,
Director of Services
July, 2007

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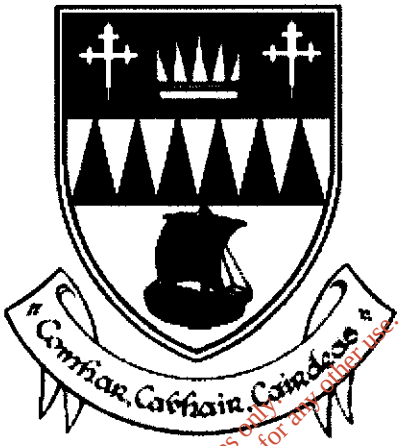
Comhairle Contae Chiarraí
Kerry County Council



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Clár Infheistíochta na Seirbhísí Uisce
Water Services Investment Programme

Dréacht Mheasúnúcháin ar Riachtanais
Draft Assessment of Needs

2006

NDP
PLEAN FORBARTHA NÁISIÚNTA

NDP
NATIONAL DEVELOPMENT PLAN

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Kerry Water Services Investment Programme

Draft Assessment of Needs (2006) Report

Background

In 2003, the Department of Environment, Heritage & Local Government (DEHLG) requested Kerry County Council to prepare an Assessment of Needs for Water Services Investment which would identify the medium term requirements of all the Local Authorities in one consolidated list. This was duly done and an Assessment of Needs was adopted by the members of Kerry County Council in November 2003.

Local Authorities have been requested by DEHLG to prepare updated assessments of water services needs in view of the scale and pattern of demographic and economic developments in recent years, and to provide an input into the next National Development Plan.

These assessments will also be used by DEHLG for project selection in future phases of the Water Services Investment Programme (WSIP) which is a three year rolling programme, mainly funded by DEHLG.

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Water Services Achievements, 2003 – 2006

Substantial works are in train as a result of the current and previous Water Services Investment Programmes. The following is the status of projects which have progressed since the 2003 Assessment of Needs was adopted.

Under Construction

- Listowel RWSS Stage 4
- Caherciveen Water Supply Scheme
- Firies – Scartaglin Regional WSS

At Tender Stage

- Waterville Sewerage Scheme
- Waterville Water Supply Scheme
- Milltown Sewerage Scheme
- Kilcummin Sewerage Scheme
- Barraduff Sewerage Scheme
- Firies Sewerage Scheme

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At Final Design Stage

- Beaufort Sewerage Scheme
- North Ardfert Source Protection
- Kenmare Water Supply Scheme

At Preliminary Design Stage

- 28 Village Sewerage Schemes
- Tralee Sewerage Scheme (Nutrient Reduction)
- Listowel Sewerage Scheme (Nutrient Reduction)
- Central Regional Water Supply Scheme (Treatment)
- Central Regional Water Supply Scheme (Reservoir)
- Kenmare Main Drainage
- Listowel Town Water Supply Upgrade

These schemes will greatly strengthen the water services infrastructure in parts of Kerry which are under severe developmental and environmental pressures. They will facilitate increased sustainable economic activities and will provide a higher level of service for our customers.

The current WSIP also includes for improvements or expansion for the Killarney Wastewater Treatment Plant and Castleisland Sewerage Scheme.

General Approach

The Assessment of the strategic medium to long term needs of the County must take account of all relevant National and E.U. environmental, public health and water quality statutory requirements, as well as the provisions of various existing studies, such as the National Water Study, National Urban Waste Water Study, Rural Water Strategies.

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The Assessment should be designed to meet the development needs identified in the County Development Plan and the deficiencies in the existing infrastructure. The settlement strategy of the County Development Plan envisages a settlement hierarchy of Regional towns, local towns and villages with an improved infrastructure being provided to facilitate development and to make villages, in particular, attractive settlements. The needs of the Town Councils must also be included in the Assessment.

Note that schemes which are included for construction in the current Water Services Investment Programme 2005- 2007 are not included in this draft Assessment, whereas schemes at planning stage are included.

The Water Services Department considers that the most pressing short terms needs of the county are to:

(a) meet our Statutory requirements to provide water that meets the standards of the Drinking Water Regulations

(b) improve the water supply and wastewater infrastructure in the areas which are under the greatest developmental and/or environmental pressures.

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(c) Provide County Strategic Studies for the future development of the water and sewerage infrastructure

and that the key medium to long term needs are:

(c) the planning and provision of the Smearla dam

(d) a roll-out of the projects identified by the strategic studies

Proposals - Water Supply Projects

Item No.1 on the draft Assessment of Needs is Water Supply Quality Improvement Project. This is designed to deal with some small water schemes which can have problems in consistently complying with the Drinking Water Regulations. These are generally the smaller schemes, often those which depend on mountain streams that can vary greatly in quality due to climatic factors. Usually, these schemes have disinfection facilities only.

The Water Services Department has been tackling these problem schemes on a piecemeal basis under the Small Schemes Programme and our own resources. However, the limited funding available has meant that the rate of progress has been too slow. We have examined all the sub-standard schemes and prepared a costed schedule of minimum works which are necessary for the drinking water to meet the Regulations at all times. The Phase 1 works mainly include the provision of physical treatment and upgraded disinfection facilities as well as source protection. The Phase 2 works include new reservoirs, siteworks, mains replacements etc.

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Item No. 7 is a major strategic study of the medium and long term water supply demands, problems and future development of the water infrastructure of the county, and will provide the justification for future water schemes.

Items Nos. 8, 9, 10 , 11,15, 16,17 are key water supply projects to serve areas where well identified problems exist. It is planned to amalgamate some smaller schemes into regional schemes that will have secure sources, particularly in West and South Kerry.

Item Nos. 18 and 19 relate to the provision of the Smearla Dam which is needed to provide a long term secure high-quality water source for North Kerry, and is especially significant in view of the potential of the Ballylongford landbank for development.

Proposals - Sewerage Scheme Projects

Items Nos. 2, 3, 4, 5, & 6 are wastewater schemes and studies which are necessary to facilitate economic development and deal with environmental problems.

Item No. 12 is a project to strategically examine how new and upgraded sewerage schemes for the 90 settlements identified in the County Development Plan should be procured and managed in the long term in the best interests of the county.

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Items Nos. 13 & 14 are sewerage schemes for villages which currently either have no sewerage infrastructure or which need upgraded facilities. These schemes will allow proper development and will deal with environmental problems.

The attached Draft Assessment of Needs contains 19 projects, some phased, with a total estimated cost of **€160.6 million**.

Summary of Objectives of the Assessment of Needs

The objectives of the investment proposed in the Draft Assessment of Needs are to

- Provide a safe reliable supply of water to all our customers which will consistently meet the requirement of the Drinking Water Regulation by upgrading and consolidating the existing schemes.
- Expand the Water Supply network to meet the development needs of the county.
- Upgrade existing town sewerage schemes, where necessary, to meet development needs and to continue to protect the receiving waters.
- Upgrade existing village sewerage schemes and construct new village sewerage schemes to facilitate sustainable development and to eliminate environmental problems.
- Advance the Smearla Dam Project to support the potential development of North Kerry.

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September, 2006

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Kerry Water Services Investment Programme

Draft Assessment of Needs (2006)

	SCHEMES	W/S	Est. Cost (€m)
1	Water Supply Quality Improvement Project (Annex 12 schemes) -	W	
	Phase 1		10.5
	Phase 2		16.0
2	NSS Hub Cluster Sewerage Schemes Project *(Abbeydorney, Ardfert, Castlemaine, Fieries, Fenit, Lixnaw, Kilflynn, Milltown, Spa)*	S	18.0
3	Kenmare Main Drainage	S	6.3
4	Killarney Main Drainage (including environs) - NSS scheme	S	7.5
5	Tralee Main Drainage Study (including environs) - NSS scheme	S	5.5
6	Listowel Main Drainage *(including environs, Dirha Cottages)*	S	3.5
7	Water Supply Schemes Strategic Study	W	0.2
8	Killorglin/ Mid-Kerry WS Improvement Scheme	W	7.0
9	Skellig Ring Water Supply Scheme	W	5.5
10	North Ardfert- Ballyheigue Water Supply Scheme	W	1.5
11	South Ardfert Water Supply Scheme	W	1.0
12	Wastewater and Sludge Project Strategic Study	S	0.2
13	Kerry Villages Waste Water Project - Phase 2 *(Annascaul, Ballyduff, Ballylongford, Castlegregory, Glenbeigh, Kilgarvan, Sneem, Tarbert)*	S	12.0
14	Village Sewerage Scheme Upgrades *(Baile an Fheirtéaraigh, Baile na nGall, Baile an Sceilg, Brosna, Causeway, Ceann Trá, An Clochán, Duagh, An Fheothanach, Gneeveguilla, Kilfenora, Knightstown, Knocknagoshel, Moyvane, An Mhuiríoch, Portmagee,)*	S	16.0
15	Castlegregory RWSS	W	5.0
16	An Ghaeltacht Thuaidh RWSS	W	5.0
17	An Ghaeltacht Theas RWSS	W	4.0
18	NE Kerry RWSS - Smearla Dam - Site Investigations	W	0.9
19	NE Kerry RWSS - Smearla Dam construction	W	35.0
	Total programme		**160.6**

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Note:
Schemes which are listed in the current Water Services Investment Programme 2005- 2007 are not included in the draft Assessment of Needs.

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Kerry

Water Services Investment Programme 2007 - 2009

Schemes at Construction	**W/S**	**Est. Cost**
Caherciveen Water Supply Scheme	W	5,550,000
		5,550,000
Schemes to start 2007		
Lough Leane Catchment Sewerage Scheme (Kilcummin, Barraduff) (H)	S	4,400,000
North Ardfert Water Supply Scheme (Source Protection)	W	360,000
Waterville Water Supply & Sewerage Scheme	W/S	18,000,000
		22,760,000
Schemes to start 2008		
Kenmare Water Supply Scheme	W	8,122,000
Kerry Central Regional Water Supply Scheme (Reservoirs) (H)	W	10,000,000
Kerry Central Regional Water Supply Scheme (Treatment)	W	6,900,000
Kerry Sludge Management (H)	S	4,620,000
Kerry Villages Sewerage Schemes Phase 1 (Caherdaniel, Scartaglen, Finuge, Currow, Brandon, Boolteens, Beaufort, Asdee, Aughasala, The Glen, Glenflesk, Cromane, Chapeltown & Cashen)	S	8,750,000
Listowel Sewerage Scheme (Nutrient Reduction)	S	220,000
Listowel Town Water Supply Scheme (Upgrade)	W	750,000
Tralee Sewerage Scheme (Nutrient Reduction) (H)	S	260,000
		39,622,000
Schemes to start 2009		
Castleisland Sewerage Scheme Stage 2	S	5,700,000
Kenmare Sewerage Scheme (Upgrade)	S	6,300,000
Kilorglin/Mid-Kerry Water Supply Improvement Scheme	W	7,000,000
Lough Leane Catchment Sewerage Scheme (Killarney)	S	7,500,000
		26,500,000
Serviced Land Initiative		
Ballyard Water Supply/ Sewerage Scheme	W/S	250,000
Rathass & Brewery Road Sewerage Scheme	S	351,000
		601,000
Schemes to Advance through Planning		
Skellig Ring Water Supply Scheme	W	5,250,000
Villages Sewerage Scheme Feasibility Study (Phase 1 Refurbishment)	S	105,000
Water Supply Schemes Strategic Study	W	210,000
NSS Hub Cluster Sewerage Scheme (Abbeydorney, Ardfert, Castlemaine, Fieries, Fenit, Lixnaw, Kilflynn, Milltown, Spa) (H)	S	18,000,000
Wastewater & Sludge Strategic Study	S	200,000
		23,765,000
Water Conservation Allocation		**2,809,000**
Asset Management Study		**130,000**
Programme Total		**121,737,000**

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

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SITE SYNOPSIS

SITE NAME: KILLARNEY NATIONAL PARK, MACGILLYCUDDY'S REEKS AND CARAGH RIVER CATCHMENT

SITE CODE: 000365

This very large site encompasses the mountains, rivers and lakes of the Iveragh peninsula, and the Paps Mountains which stretch eastward from Killarney towards Millstreet. It is the most mountainous region in Ireland and includes Carrauntoohil (1039m), the highest peak in the country. The underlying geology is almost entirely Old Red Sandstone, although Carboniferous Limestone occurs on the eastern shores of Lough Leane and rhyolitic lavas occur above Lough Guitane. The dramatic sandstone ridges and valleys have been shaped by glacial processes and many of the lakes are impounded by glacial moraines. Located close to the Atlantic in the south-west of Ireland, the site is subject to strong oceanic influences. Generally, the Lusitanian flora and fauna is well represented, while the high peaks and cliffs support arctic-alpine relicts.

The site is of great ecological interest, with at least ten habitats which are listed on Annex I of the EU Habitats Directive. The site is a candidate SAC selected for blanket bog, Yew wood and alluvial woodlands, priority habitats on Annex I of the E.U. Habitats Directive. The site is also selected as a candidate SAC for lowland oligotrophic lakes, upland oligotrophic lakes, floating river vegetation, alpine heath, dry heath, wet heath, *Molinia* meadows, old Oak woodlands, Rhynchosporion, Calaminarian grassland and Juniper scrub, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive – Killarney Fern, Slender Naiad, Freshwater Pearl Mussel, Kerry Slug, Marsh Fritillary, Killarney Shad, Atlantic Salmon, Brook Lamprey, River Lamprey, Sea Lamprey, Lesser Horseshoe Bat and Otter.

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The Oak woodlands, occurring mostly around the Killarney lakes, are the habitat for which the area is perhaps best known. They form the most extensive area of native woodland remaining in Ireland and include Derrycunihy Wood, described as perhaps the most natural Sessile Oak wood in the country. The woods are typically dominated by Sessile Oak (*Quercus petraea*) with an understorey of Holly (*Ilex aquifolium*). The Strawberry Tree (*Arbutus unedo*) is a notable component of the woods and there are scattered Yew (*Taxus baccata*). The herb layer is not particularly species-rich, but the woods support perhaps the best developed Atlantic bryophyte community in Europe. Several rare species are present including *Lejeunea flava, Cyclodictyon laetivirens, Daltonia splachnoides, Sematophyllum demissum* and *Radula carringtonii*.

Yew, which favours the limestone of Muckross peninsula, forms the only sizeable Yew woodland in Ireland and some of the trees are up to 200 years old. The dense shade beneath the tree results in few herbs in the ground flora, but the bryophyte layer is almost continuous.

Wet woodland or carr, occurring on the low-lying limestone areas within the flood plain of Lough Leane, forms one of the most extensive areas of this woodland type in Ireland. The dominant canopy species are Alder (*Alnus glutinosa*), willows (*Salix* spp.), Ash (*Fraxinus excelsior*) and Downy Birch (*Betula pubescens*), while the field layer is dominated by Remote Sedge (*Carex remota*) and Creeping Bent (*Agrostis stolonifera*).

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Adding to the diversity of the woodland component of the site are a number of mixed woodlands, including those of Ross Island which support one of the richest herb layers of the Killarney woods.

The dominant habitat types within the overall site are blanket bog, heath and upland grassland. The heath and grassland generally occur on areas with shallow peat and on the mineral soils of the steep mountain sides, while the blanket bog occurs on the more gentle slopes, plateaux and other level ground. Often the habitats occur in a mosaic, with exposed rock frequently occurring.

A variety of blanket bog types are represented from lowland valley to mountain blanket bog. Some of the best include: Cummeragh River Bog Nature Reserve, a domed bog which is perhaps the most southerly intact blanket bog in the country; Ballygisheen, which contains one of the most extensive areas of intact lowland blanket bog in Co. Kerry; Coomacheo/Caherbarnagh, which combine to form the largest mountain blanket bog in the south-west; Eirk Bog Nature Reserve, a classic example of a bog intermediate between a raised and blanket bog; Mangerton Bog, an upland bog which grades into an unusual lichen heath seen at no other site; and Oolagh East, a quaking basin mire. Generally, the bogs have a characteristic flora. The Lusitanian species, Large-flowered Butterwort (*Pinguicula grandiflora*) is common. The bogs also support a number of unusual species, including mosses (*Sphagnum pulchrum, S. fuscum, S. platyphyllum, S. strictum, S. contortum* and *Calliergon stramineum*), liverworts (*Cladopodiella francisci* and *Calypogeia azurea*) and lichens (*Cladonia mediterranea, C. macilenta, C. rangiferina, C. arbuscula* and *Cetraria islandica*).

Rhynchosporion vegetation is confined to wet areas within the lowland blanket bogs, with one of the best areas for the habitat being to the north-east of the Ballygisheen Pass. On a portion of this bog there is an extensive area of quaking flats and pools dominated by *Sphagnum cuspidatum* and *Sphagnum auriculatum*. These areas have a typically species-poor flora which includes Bogbean (*Menyanthes trifoliata),* White Beak-sedge *(Rhynchospora alba),* Bog Asphodel *(Narthecium ossifragum),* Bog Cotton *(Eriophorum angustifolium)* and Great Sundew (*Drosera anglica).* Brown Beak-sedge (*Rhynchospora fusca)*, a locally rare plant of wet bog pools, is occasional within the site. Although the habitat is best developed in very wet areas of intact bog it may also occur in wet areas of regenerating cutover blanket bog.

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Wet heath often occurs in association with blanket bog and features Cross-leaved Heath (*Erica tetralix*). Dry heath is more frequent and is dominated by Heather (*Calluna vulgaris*), Bell Heather (*Erica cinerea*) and Western Gorse (*Ulex gallii*), with occasional Bilberry (*Vaccinium myrtillus*). This habitat is well developed on the Paps. Elsewhere it is often overgrazed, with upland grassland becoming more frequent. Some of the highest ridges support alpine heath (referable to the Lycopodium alpinum - Racomitrium lanuginosum association). Widespread plant species of the alpine heath include Bog Myrtle (*Vaccinium myrtillus),* Crowberry *(Empetrum nigrum)* and Fir Clubmoss (*Huperzia selago),* while species such as Juniper (*Juniperus communis* subsp. n*ana*) and Dwarf Willow *(Salix herbacea)* have a much more restricted distribution.

The site contains many lakes, but these can be broadly divided into two types: small upland corrie lakes and larger lowland lakes. Examples of the first type are Lough Murtagh and Lough Gortavehy in the Paps. They are oligotrophic and typically species-poor, with Quillwort (*Isoetes lacustris*), Water Lobelia (*Lobelia dortmanna*) and Shoreweed (*Littorella uniflora*) occurring most commonly. The lowland lakes are mostly oligotrophic, although Lough Leane, the largest fresh water body in the region, has become somewhat mesotrophic as a result of pollution from Killarney town. These lowland lakes tend to be more species-rich than those at higher altitudes, with additional species such as Awlwort (*Subularia aquatica*), Six-stamened Waterwort (*Elatine hexandra*) and Alternate

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Water-milfoil (*Myriophyllum alterniflorum*). Good examples include Lough Caragh, Upper Lake and Muckross Lake.

The rivers associated with these lakes are also of importance. The Caragh is relatively unpolluted from headwater to estuary, a rare phenomenon in Europe. The Flesk runs over Old Red Sandstone in its upper reaches and limestone as it nears Lough Leane. Both rivers support floating and submerged vegetation and rare invertebrates. Rocks around the smaller mountain streams often support a lush vegetation of ferns and bryophytes, most notably at Torc Waterfall.

Other habitats of note include: Juniper (*Juniperus communis*) scrub found on islands in the Upper Lake and on dry ridges in nearby Newfoundland Bog; damp meadows, with Purple Moor-grass (*Molinia caerulea*), supporting scarce species such as Whorled Caraway (*Carum verticillatum*) and Ivy-leaved Bellflower (*Wahlenbergia hederacea*); and Calaminarian grasslands, associated with the old copper mines on Ross Island, with species such as Sea Campion (*Silene vulgaris* subsp. *maritima*) and Thrift (*Armeria maritima*).

A large number of plant and animal species of interest occur within the site:

There are two plant species listed on Annex II of the EU Habitats Directive: Slender Naiad (*Najas flexilis*) which is found in some of the lakes; and, most famous of all, the Killarney Fern (*Trichomanes speciosum*). An additional twenty-two Red Data Book plant species have been recorded, but only twelve of these have been seen recently. These are Pillwort (*Pilularia globulifera*), Kerry Lily (*Simethis planifolia*), Irish Lady's Tresses (*Spiranthes romanzoffiana*), Slender Cottongrass (*Eriophorum gracile*), Slender Cudweed (*Logfia minima*), Betony (*Stachys officinalis*), Heath Cudweed (*Omalotheca sylvatica*), Alder Buckthorn (*Frangula alnus*), Alpine Saw-wort (*Saussurea alpina*), Hoary Whitlowgrass (*Draba incana*), Smooth Brome (*Bromus racemosus*) and Holly Fern (*Polystichum lonchitis*). The first seven of these species are legally protected (Flora Protection Order, 1999).

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The site is very important for oceanic bryophytes, particularly the woodland species. It also contains good representative examples of the Northern Atlantic Hepatic Mat community and other oceanic montane communities. Killarney Oak woods and mountains have been nominated as a site of international importance for bryophytes.

Additional plant species of interest include a fern (*Dryopteris affinis* subsp. *stilluppensis*) and a Whitebeam (*Sorbus anglica*), both at their only Irish locations.

The Killarney Woods are notable for the number of rare species of Myxomycete fungus that have been recorded, namely *Collaria arcyrionema*, *Craterium muscorum*, *Cribraria microcarpa* (only known Irish site), *C. rufa*, *C. violacea*, *Diderma chondrioderma*, *D. lucidum*, *D. ochraceum*, *Fuligo muscorum*, *Licea marginata*.

The site has six bird species which are listed on Annex I of the EU Birds Directive. A small flock of Greenland White-fronted Geese, which winters on the boglands within the National Park, is now the only regular flock in the south-west. The site has one of the highest concentrations of breeding Peregrines in the country, as well as some breeding Merlin. Chough is found both in the coastal areas and inland areas of the site, with possibly up to 30 pairs breeding. Kingfisher is a species associated with the lakes and rivers, especially in the National Park and probably breeds. Finally, a few pairs of Common Tern breed within the site.

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The woodlands provide habitat for a variety of breeding birds, most notably Garden Warbler, Blackcap, and probably a few pairs each of the rare Redstart and Wood Warbler.

Lough Leane is a site for wintering wildfowl with the following the average counts for the two winters 1995/96 and 1996/97: Teal (208), Mallard (350), Pochard (81), Tufted Duck (323) and Coot (169).

The site supports most of the Irish mammal species. Of particular note is the occurrence of two EU Habitats Directive Annex II species: Lesser Horseshoe Bat, with a total population of about 300 individuals distributed at several locations, including both nursery and hibernation sites, and Otter. Perhaps the best known mammals of the Killarney National Park are the Red Deer, which form the only remaining native herd in Ireland, comprised of around 600 animals. Sika Deer also occur. Pine Marten is another notable species.

The site is valuable for its rare fish species, five of which are listed on Annex II of the EU Habitats Directive: Brook Lamprey (*Lampetra planeri*), River Lamprey (*Lampetra fluviatilis*), Sea Lamprey (*Petromyzon marinus*), Atlantic Salmon (*Salmo salar*) and Killarney Shad (*Alosa fallax killarnensis*). The Killarney Shad is a unique land-locked subspecies confined to the Killarney lakes. Also of note is the glacial relict, Arctic Charr (*Salvelinus alpinus*), a Red Data Book species, a unique form of which is found in Lough Coomasaharn.

There are numerous rare invertebrates within the site. These include three EU Habitats Directive Annex II species: Kerry Slug (*Geomalacus maculosus*), the Freshwater Pearl-mussel (*Margaritifera margaritifera*) and the Marsh Fritillary (*Euphydryas aurinia*). The Kerry Slug and Pearl-mussel populations are of particular importance in a national context. Other species of note include: three chironomids of international importance found in the River Flesk; a wood ant (*Formica lugubris*) at one of only four Irish sites; a snail (*Limnaea involuta*), in Lough Crincaum, at its only known location; two dragonflies (*Cordulea aenea* and *Somatochlora arctica*), the former at one of only two known sites in Ireland and the latter at its only known Irish location; and several other aquatic and woodland species at their only known Irish locations.

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The main landuse within the site is grazing by sheep. In and around the National Park deer grazing is also common. The extensive grazing has caused damage to many of the terrestrial habitats, resulting in degradation of heath and blanket bogs and prevention of woodland regeneration. In the upland habitats the erosion caused by grazing is exacerbated by the exposed nature of the terrain.

Apart from grazing, the woodlands are particularly threatened by Rhododendron (*Rhododendron ponticum*) invasion: approximately two thirds of the Oak woodlands are affected, although a Rhododendron removal programme is underway in the National Park. The Yew wood has been adversely affected by heavy grazing for many years, but it is intended to control this in the near future by erection of a deer fence. The bogs are sensitive to grazing and are also threatened by turbary, burning and afforestation. Most of the lakes are very acid sensitive and therefore vulnerable to afforestation within the catchment areas. Lough Leane has been subject to some eutrophication, although water quality appears to have improved since phosphates were removed from the sewage in 1985.

A management plan was drawn up for the Killarney National Park in 1991. The park is managed primarily for conservation purposes although recreation is also provided for.

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Overall, the site is of high ecological value because of the diversity, quality and extensiveness of many of the habitats and impressive list of rare species of flora and fauna. In recognition of its importance the Killarney National Park has been designated a World Biosphere Reserve.

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5.12.2005

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Comhairle Contae Chiarraí,
Ráth Teas,
Trá Lí, Co. Chiarraí.

Water Services
Kerry County Council,
Rathass,
Tralee, Co. Kerry.

COMHAIRLE CONTAE CHIARRAÍ
KERRY COUNTY COUNCIL

Guthán | Tel 066 7183503 Faics | Fax 066 7181639 Rphost | Email waterservices@kerrycoco.ie Suíomh | Web www.kerrycoco.ie

Mr. Eamonn Meskell,
Regional Manager,
National Parks and Wildlife Services,
Department of the Environment, Heritage and Local Government,
Muckross House,
Killarney,
Co. Kerry.

Dear Mr. Meskell,

In accordance with the Waste Water Discharge (Authorisation) Regulations 2007 (S.I. No. 684 of 2007), Kerry County Council intend to apply to the Environmental Protection Agency for a Wastewater Discharge Certificate for the wastewater networks serving the following agglomerations in County Kerry.

In each case the agglomerations include the village and the developed surrounding areas. The wastewater network also includes the relevant wastewater treatment plant.

The receiving waters for the wastewater network discharges and the locations of the respective wastewater treatment plants are shown in the following table.

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Agglomeration	Receiving Waters	WWTP Location
Anascaul	Owenascaul River	Gurteen (Ballynacourty)
Ballydavid	Smerwick harbour	Murreagh (Ed Kilmalkedar)
Brosna	Clydagh River	Brosna West
Ballyferriter	Smerwick harbour via Unnamed local River	Reask
Castlemaine	River Maine	Blackhill
Causeway	Unnamed stream flowing to Crompaun River flowing to Cashen River 9km downstream.	Dromkeen West
Cloghane	Sea	Cloghane (ed Cloghane)
Duagh	Feale river via Glasha River	Foildarrig
Dungeagan/Ballinskelligs	Ballinskelligs Harbour	Ballinskelligs
Farranfore	Two streams within the village	Dromore (ed Molahiffe)
Feohanagh	Smerwick Harbour via Feohanagh River.	Feohanagh
Gneeveguilla	Quagmire river via a local stream via a stone filled ditch.	Gneevguilla
Kilfenora	Tralee Bay.	Ballymakegoge
Kilflynn	Shannow River.	Castletown
Kilgarvan	Roughty River.	Gortnaboul
Knocknagoshel	Owveg River via Unnamed Stream.	Knocknagoshel West
Moyvane	Galey River via Moyvane River.	Moyvane North
Murreagh	Sea.	Gallarus
Portmagee	Portmagee channel.	Doory (ed Portmagee)
Rossbeigh	Dingle Bay via Rossbehy Creek.	Rossbehy
Ventry	Sea	Cloghane (ed Glin)

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Kerry County Council has been requested by the EPA to correspond with the National Parks and Wildlife Services in relation to a determination as to the likelihood of discharges from the wastewater works having a significant effect on a European site. The Council would be obliged if you could advise it as to the likelihood of the discharges having a significant effect on a European site and if so, please advise as to any appropriate assessment of the implications for the designated site that must be carried out.

Yours sincerely,

Charles O'Leary.

Copy to:
Ms Mary Boothman,
Devlopment Applications Unit,
Department of the Environment, Heritage and local Government,
Dún Séine,
Harcourt Lane,
Dublin 2.

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Kerry County Council

COUNTY KERRY
WASTEWATER & SLUDGE PROJECT

STRATEGY FOR DELIVERY

Brief for Engagement of Consultant/ Consortium

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Version 2.5 – August 2006

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Chapter 1 – Project Overview

1.0 General

The 2003-2009 County Kerry Development Plan introduces the concept of the Settlement Strategy as the appropriate methodology to provide for the strategic development of towns, villages and settlements throughout the County as well as introducing an overall strategy for maintaining and strengthening rural areas. The County Development Plan proposes that investment on infrastructure and services should be directed to the centres identified within the Settlement Strategy and that the objectives for the provision of housing and infrastructure should be determined in accordance with the settlement hierarchy.

The Development Plan identifies 90 towns, villages and development nodes, grouped in accordance with the size of the settlement, location, function and interaction with other settlements and communities, as follows:

- 3 Regional Centres
- 7 District Centres
- 7 Towns
- 28 Small Villages
- 45 Small Villages/ Development Nodes

The Water Services Capital Unit of Kerry County Council is required to deliver the phased delivery of new and upgraded wastewater infrastructure at the above 90 towns, villages and development nodes and it is proposed to address the procurement, management and long-term operation of the required infrastructure under the *County Kerry Wastewater & Sludge Project*.

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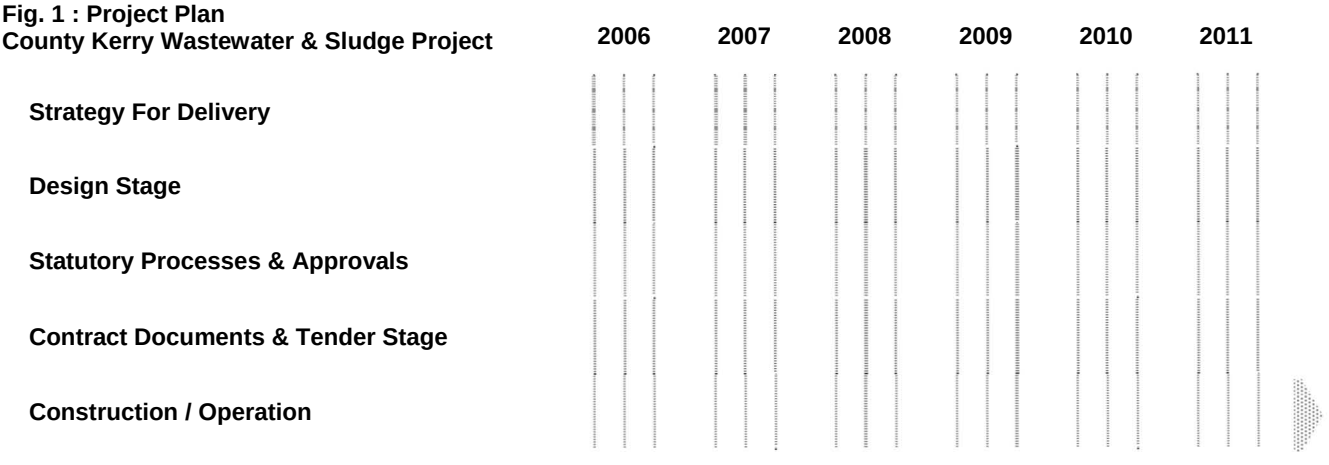
The current Brief, concerning the **Strategy for Delivery** stage of the *County Kerry Wastewater & Sludge Project*, sets out the scope for the formulation of an overall County strategy that will ensure that the required wastewater infrastructure is planned, financed, procured, delivered and subsequently operated through the most cost effective and appropriate methods and structures with specific examination of the potential of project bundling and Public Private Partnerships to achieve value for money and efficiency in project delivery.

The Strategy for Delivery may be seen as the first stage of the 5-Stage project as indicated on the Project Plan on Fig 1.

Fig. 1 : Project Plan
County Kerry Wastewater & Sludge Project



The Strategy for Delivery shall be formulated within an overall design horizon of at least 20 years and shall be subject to review on a 5-year basis.

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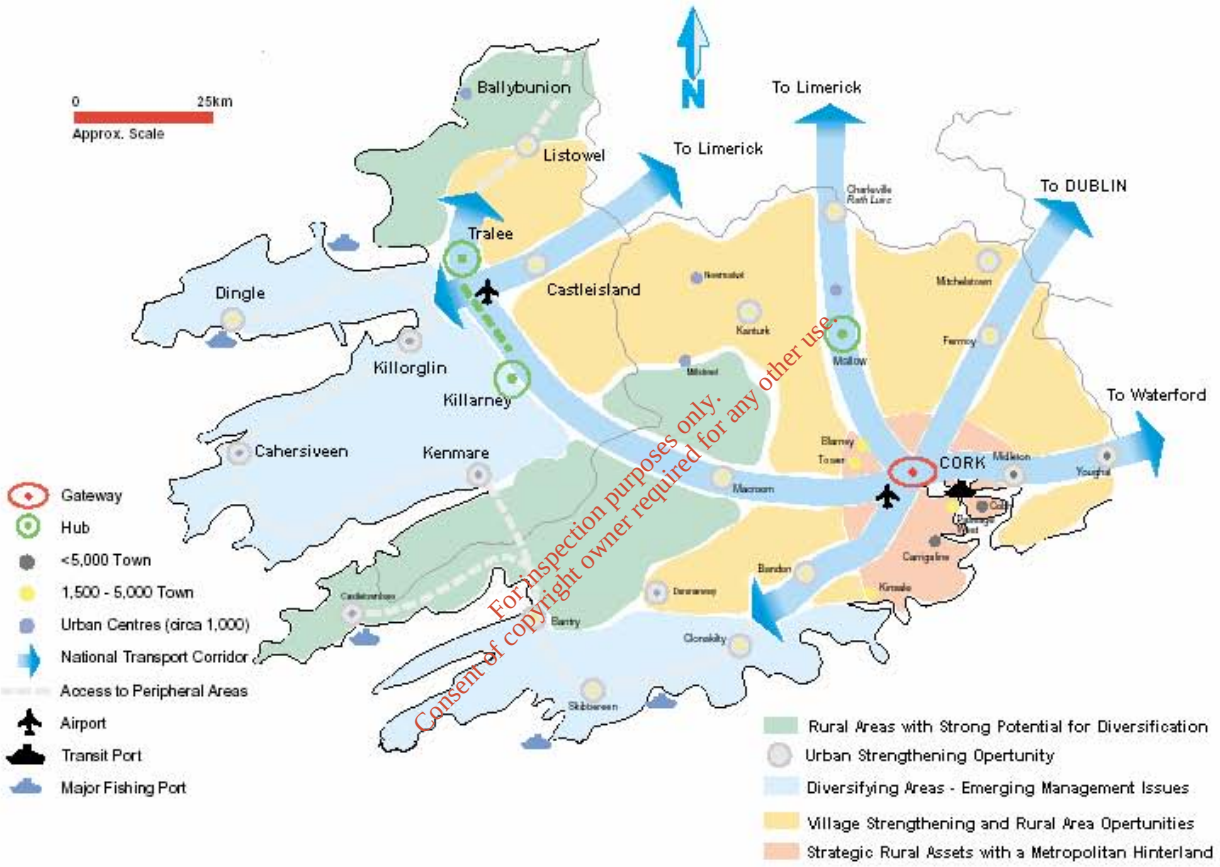
Chapter 2 – Background

2.0 County Kerry Development Plan 2003-2009

The 2003-2009 Kerry County Development Plan notes that the population of the County increased by 5.1% to 132,527 in the 1996 - 2002 Census period and presents estimates of the population of the County in 2021 at 167,000 persons. This estimate includes allowances for the growth that is expected to arise from the proposals formulated by the National Spatial Strategy in relation to the distribution of some of Dublin's growth to other regions in Ireland.

Fig. 2 : National Spatial Strategy



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As part of the preparation of the 2003 – 2009 County Development Plan, Kerry County Council completed a series of strategic planning studies covering each of the 5 Electoral Areas within the County. The policies and objectives of the County Development Plan have been based on these studies and the following objectives are included in the County Development Plan:

- *Strengthen towns and villages throughout the County, improve the services and infrastructure provided within them and make them more attractive places in which to live.*

- *Promote the development of the Tralee - Killarney corridor as a means of strengthening the economic base of the County and acting as a focus for inward investment.*

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2.1 County Kerry - Settlement Strategy

The 2003 – 2009 Development Plan notes that the 2002 Census of population indicates that large population centres and their immediate hinterlands are generally increasing in population while many of the villages in rural areas are in decline.

The Plan presents the concept of a Settlement Strategy as the methodology to address the strategic development of towns, villages and settlements throughout the County as well as providing an overall strategy for maintaining and strengthening rural areas. The Settlement Strategy places towns and villages into different categories related to their function, size and strategic potential.

Among the Objectives of the Settlement Strategy are:

- To ensure that development throughout the County is carried out in accordance with the proper planning and sustainable development of the area.
- To promote the development of the Tralee to Killarney development corridor in order to provide the impetus for the future development of the County.
- To strengthen towns and villages throughout the County, improve the services and infrastructure provided within them and make them more attractive places in which to live.
- To provide for the needs of local people to live in their own area and people wishing to establish their primary place of residence in rural areas in order to maintain vibrant rural communities.
- To make local area plans for identified settlements throughout the County that will promote these objectives.
- To provide adequate holiday home accommodation within or adjacent to existing settlements in order to promote sustainable tourism within the County while respecting the existing culture and character of the area.

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2.2 Towns & Villages - Settlement Strategy

The 2003-2009 County Development Plan identifies a total of 90 towns, villages and settlements and groups these into a settlement hierarchy of 5 categories that are defined in terms of the size of the settlement, location, function and interaction with other settlements and communities. The 5 categories are listed as follows:

- 3 Regional Centres
- 7 District Centres
- 7 Towns
- 28 Small Villages
- 45 Small Villages/ Development Nodes

The Development Plan states that:

> ***"…investment in infrastructure and services will be directed to the centres identified within the hierarchy and the objectives for the provision of housing, water and sewerage and other services and infrastructure should be determined in accordance with this hierarchy….."***

A full list of the 90 towns, villages and settlements, presented in the 5 categories as identified by the Development Plan, are listed on **Table 1**.

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Table 1 – County Development Plan Settlement Hierarchy - (90 Settlements)

Settlement Hierarchy	Definition	Settlements		
3 Regional Centres	Settlements with strategic location, populations in excess of 3,500 with good social & economic infrastructure	Killarney (Incl. Fossa) Listowel Tralee		
7 District Centres	Large settlements that provide a range of services to the towns, villages and rural areas in their catchment, populations in excess of 1,000	Ballybunion Cahersiveen Castleisland Dingle Kenmare Killorglin Rathmore		
7 Towns	Towns provide for daily and weekly needs of inhabitants and a range of employment opportunities and community services appropriate to their size and function.	Ballyheigue Castlegregory Castlemaine Farranfore Milltown Sneem Waterville		
28 Small Villages	Villages provide for convenience and daily needs and small scale employment opportunities and local community services for residents and surrounding rural population	Abbeydorney Annascaul Ardfert Ballyduff Ballyferriter Ballylongford Barraduff Beaufort Brosna	Caherdaniel Causeway Currow Duagh Fenit Firies Glenbeigh Gneeveguilla Kilcummin	Kilflynn Kilgarvan Knightstown Knocknagashel Lixnaw Moyvane Portmagee Scartaglen Tarbert Ventry
45 Small Villages /Development Nodes	Localities with a scattered development pattern providing local community facilities.	Asdee Aughacashla Ballydavid Ballyfinnane Ballyhar Ballymac/Clogher Bunane Boolteens/ Keel Brandon Camp Cashen Castlecove Chapeltown Cloghane	Cordal Cromane Currans Dungegan/Ballinskelligs Dunquin Faha/Listry Fahamore Feoghanagh Finuge Glen Glencar Glenflesk Inch Kells Kilfenora	Kilgobnet Kilmoyley Knockanure Lauragh Lispole Lisselton Lyrecrompane Mastergeehy Murreagh Reenard Rossbeigh Stradbally Tahilla Templenoe The Spa Tuosist

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2.3 Settlement Hierarchy – Objectives

The County Development Plan defines the major objectives of the Settlement Strategy in terms of the Settlement Hierarchy as follows:

2.3.1 Regional Centres

- Accommodate and promote the development of linkages and infrastructure servicing these towns.
- Accommodate and promote proper planning and sustainable development in their environs
- Promote the role of these towns as economic, social and cultural centres for the surrounding areas
- Prepare Local Area Plans for the environs of Tralee, Killarney and Listowel.

2.3.2 District Centres/Towns

- Promote growth in these established towns to allow for balanced and co-ordinated development throughout the county
- Promote linkages between these towns and the Tralee/Killarney Corridor in order to distribute the influence of this corridor throughout the County
- Promote the strengthening of these towns as employment and service centres and as attractive residential centres.
- Facilitate development which will promote the social, cultural and economic development of these towns.
- Provide and facilitate the range of public services necessary to achieve growth and encourage these towns as district centres.
- Prepare Local Area Plans for these towns and zone sufficient lands for their residential, commercial, economic and social development in accordance with the recommendations of the Land Use and Transportation Studies carried out for the area.

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2.3.3 Villages/ Small Villages/ Development Nodes

- Promote the strengthening of existing rural villages as a focus for the development of rural areas.
- Prepare plans for these villages identifying strategic objectives for their overall development within defined development limits.

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2.4 County Kerry Water Services Investment Programme 2004 - 2006

The Capital Works Programme for Water Services in County Kerry is identified by Kerry County Council in the Assessment of Needs and is subsequently assessed and included by the DoEHLG in the Water Services Investment Programme (WSIP).

Table 2 lists the wastewater projects that have been included by the DoEHLG in the Kerry County Council Water Services Investment Programme 2004 –2006:

Table 2 : 30 Locations (WSIP 2004 – 2006)

Project		Location	Proposed Works
Lough Leane Catchment Sewerage Schemes 3 Projects		Killarney/Fossa	Upgrade/Expansion
		Barraduff	New Scheme
		Kilcummin	New Scheme
Town Wastewater Projects		Waterville	New Scheme
		Castleisland	Upgrade/Expansion
		Kenmare	Upgrade/Expansion
24 Village Projects	**Kerry Villages Sewerage Scheme** (14 Projects)	Asdee	New Scheme
		Aughasla	New Scheme
		Beaufort	New Scheme
		Boolteens/ Keel	New Scheme
		Brandon	New Scheme
		Caherdaniel	New Scheme
		Cashen	New Scheme
		Chapeltown	New Scheme
		Cromane	New Scheme
		Currow	New Scheme
		Finuge	New Scheme
		Glenflesk	New Scheme
		Scartaglin	New Scheme
		The Glen	New Scheme
	Village Sewerage Scheme Refurbishment Phase 1 – 10 Projects	Ardfert	Upgrade/Expansion
		Ballyduff	Upgrade/Expansion
		Ballylongford	Upgrade/Expansion
		Fenit	Upgrade/Expansion
		Firies	Upgrade/Expansion
		Glenbeigh	Upgrade/Expansion
		Lixnaw	Upgrade/Expansion
		Milltown	Upgrade/Expansion
		Sneem	Upgrade/Expansion
		Tarbert	Upgrade/Expansion
Kerry Sludge Management Plan		All Sludges	Sludge Treatment & Disposal

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2.5 Kerry County Council Water Services – Assessment of Needs 2003

Wastewater projects that have been included by the DoEHLG in the WSIP 2004 – 2006 have been selected from the list of projects that was identified by Kerry County Council in the 2003 Assessment of Needs. **Table 3** lists the Wastewater projects that have been identified in the 2003 Assessment of Needs and that await inclusion by the DoEHLG in future WSIPs:

Table 3 : 36 Village Locations - (Assessment of Needs 2003)

	Project	Location	Proposed Works
23 Village Projects	**Village Sewerage Scheme Refurbishment** Phase 2 : 8 Projects	Anascaul	Upgrade/Expansion
		Ballyferriter	
		Castlegregory	
		Castlemaine	
		Causeway	
		Dungeagan / Ballinskelligs	
		Knightstown	
		Moyvane	
	Village Sewerage Scheme Refurbishment Phase 3 : 15 Projects	Abbeydorney	Upgrade/Expansion
		Ballydavid	
		Brosna	
		Cloghane	
		Duagh	
		Feohanagh	
		Gneeveguilla	
		Kilfenora	
		Kilflynn	
		Kilgarvan	
		Knocknagashel	
		Murreagh	
		Portmagee	
		Rossbeigh	
		Ventry	
13 Village Projects	**Village Sewerage Schemes Programme No. 2** 13 Projects	Camp	New Schemes
		Castlecove	
		Currans	
		Dunquin	
		Inch	
		Kells	
		Knockanure	
		Lauragh	
		Lisselton	
		Lispole	
		Templenoe	
		Tousist	
		Spa	

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2.6 Kerry County Council - Operational Wastewater Projects

Kerry County Council currently operate 12 modern wastewater treatment plants as listed on **Table 4**:

Table 4 : 12 Locations (Existing Wastewater Plants)

Project	Year Constructed/ Upgraded	Design Capacity P.E.
Ballybunnion	1993	8,180
Ballyheigue	2003	4,234
Caherciveen	1995	5,000
Castleisland *	1992	6,000
Dingle	1995	8,600
Farranfore	2004	500
Kenmare *	1995	3,500
Killarney*	1997	42,000
Killorglin	1995	5,000
Listowel	1987	12,500
Rathmore	2002	1,750
Tralee	1998	42,000

**** Also listed in Table 1 as Projects requiring Upgrade/Expansion***

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2.7 County Kerry Sludge Management Plan

In 1993, the Department of Environment, Heritage & Local Government published a Strategy Study on Options for the Treatment and Disposal of Sewage Sludge in Ireland. The study identified 48 sludge management regions nationally, within which a hub-centre for sludge treatment was located. County Kerry was divided into two regions, North Kerry (Region 17) and South Kerry (Region 18).

In July 2003, Kerry County Council published a *Sludge Management Plan for County Kerry* (prepared by Fehily Timoney & Company). The objectives of the Plan were:

- To identify integrated sludge management options to facilitate the treatment of municipal sludge so as to produce a Biosolid.
- To investigate the options for beneficial use of the Biosolids produced in County Kerry.
- To make recommendations for sustainable management of all non-hazardous sludges in County Kerry including agricultural slurry.

The 2003 Plan identified that 99.9% of all sludges generated in the County were disposed of to land spread and quantified the annual non-hazardous sludge generated in the County as follows:

- Agriculture 191,699 tDS
- Municipal Wastewater 3,202 tDS (predicted load at 2020 from 46 plants)
- Industry 3,081 tDS
- Septic Tank/Package Plants 174 tDS
- Municipal Water Treatment 157 tDS

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2.8 County Kerry Sludge Management Plan - Recommendations

The recommendations arising out of the *2003 Kerry Sludge Management Plan* are:

a) Establish hub -centre(s) for treatment of municipal wastewater sludge to serve the westerly part of the Iveragh Peninsula.

b) Up-grade the sludge treatment plant at Tralee to serve as a sludge treatment centre for Region 17 (North Kerry) or alternatively establish hub-centre(s) at Listowel and /or Dingle or both.

c) Conduct a solids mass balance at Tralee wastewater treatment plant to identify the actual sludge production rate.

d) Install appropriate sludge treatment technologies at the selected hub-centre(s).

e) Provide adequate dewatering facilities and sufficient sludge storage capacity at the satellites serving hub-centres.

f) Maintain road access and hardstanding to allow tanker turning at the hub-centre(s) and satellites.

g) Promote Biosolids for use as a fertiliser in agriculture in County Kerry by establishing a Biosolids Use Committee between Kerry County Council and agricultural representatives.

h) Require sludge from Biofilters, packaged plants and septic tanks to be brought to the nearest hub-centre for treatment in accordance with the transportation plan.

i) Implement & adopt measures outlined for management of septic tank sludge and cooking oil.

j) Confirm volume of sludge arising at all municipal water treatment plants and install or upgrade holding tanks as appropriate.

k) Continue use of industrial sludges in agriculture, provided that all spreadlands are deemed suitable and that nutrients supplied in sludge are balanced with crop nutrient requirements.

l) Continue with current management strategies for sludges arising from treatment of potable water until alternative solutions are identified and implemented.

m) Perform nutrient balances in accordance with the Code of Good Practice for the Use of Biosolids in Agriculture when implementing the Biosolids use in agriculture.

n) Design all nutrient management plans for grasslands to a target soil phosphorus concentration of 10 mg/kg in accordance with Teagasc's target Index 3 criteria.

o) Implement a quality control system as an integral part of the success of the Sludge Management Plan. An EMS should be established to deal with quality control issues, including:

- sludge quantity, quality,transportation
- Biosolids quality, storage and use
- landspreading of non-hazardous sludges, sludge disposal to landfill
- hub-centre and satellite operation, staff training

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2.9 Sludge Hubs & Satellites - County Kerry Sludge Management Plan

The 2003 Sludge Management Plan proposed the following Hubs and associated Satellite plants in County Kerry:

Table 5: Hubs & Satellites – Sludge Management Plan

Hub Region/Town	Region 16 Tralee		Region 17 Killarney	Region 17 A Waterville/Cahersiveen
37 Locations	Abbeydorney	Castlemaine	Fieries	Cahersiveen
	Annascaul	Causeway	Glenbeigh	Dungegan/ B'skelligs
	Ardfert	Dingle	Gneeveguilla	Knightstown
	Ballybunnion	Duagh	Kenmare**	Portmagee
	Ballyduff	Fenit	Kilgarvan	Sneem
	Ballyferriter	Knocknagashel	Killarney	Waterville
	Ballyheigue	Listowel**	Killorglin**	
	Ballylongford	Lixnaw	Milltown	
	Brosna	Moyvane	Rathmore	
	Castleisland**	Tarbert	Rossbeigh	
		Tralee		

****Satellite Plants**

Subsequent to the identification of the Settlement Strategy for the 90 locations under the County Kerry Development Plan 2003-2009, planning for wastewater and sludge infrastructure must now include the following additional settlements that have not been considered in the formulation of the 2003 Sludge Management Plan:

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Table 6: Additional Settlements

Hub Region/Town	Region 16 Tralee		Region 17 Killarney	Region 17 A Waterville/Cahersiveen
53 Locations	Asdee	Fahamore	Ballyhar	Bunane
	Aughacasla	Feohanagh	Barraduff	Caherdaniel
	Ballydavid	Finuge	Beaufort	Castlecove
	Ballyfinnane	Inch	Cromane	Chapeltown
	Ballymac/Clogher	Kilfenora	Currow	Glen
	Boolteens/Keel	Kilflynn	Faha/Listry	Kells
	Brandon	Kilmoyley	Farranfore	Mastergeehy
	Camp	Knockanure	Glencar	Reenard
	Cashen	Lispole	Glenflesk	Tahilla
	Castlegregory	Lisselton	Kilcummin	
	Cloghane	Lyrecrompane	Kilgobnet	
	Cordal	Murreagh	Lauragh	
	Currans	Spa	Scartaglen	
	Dunquin	Stradbally	Templenoe	
		Ventry	Tuosist	

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2.10 County Kerry Sludge Management Plan - Delivery

Current DoEHLG policy requires that, where viable, solutions to sludge management issues should be procured as part of a Public-Private Partnership where the actual technology and techniques will be determined during procurement.

The DoEHLG have now requested Kerry County Council to prepare a report detailing proposals to implement the *Sludge Management Plan* with an outline of the preferred implementation route.

2.11 Employment & Economic Activity

While the 2003-2009 County Kerry Development Plan acknowledges that Ireland has experienced unprecedented economic growth of 10.1% per annum in the period 1997-2001, it also notes that, in common with other peripheral counties and regions, County Kerry has not benefited from the growth in prosperity and employment to the same extent as the Greater Dublin Area and other major urban centres across Ireland.

In addressing the issue of regional imbalance in economic growth, the importance of spatial planning has been recognised by the Irish Government in the publication of the National Development Plan and National Spatial Strategy that defines areas of the country in terms of social, economic & spatial relationships rather than administrative boundaries. A designated Development Corridor has been identified for Tralee-Killarney to create a critical mass in size, concentration and characteristics of population to support sufficient levels of services and facilities that will attract economic activity.

The 2003-2009 County Development Plan presents the following objectives to facilitate the establishment of the Development Corridor and related development activity:

- Support the economic growth of existing towns and villages in accordance with the Settlement Strategy.
- Zone lands for economic development in the towns and villages throughout the County in accordance with the Settlement Strategy.
- Diversify the economy including that of rural areas by promoting knowledge-based industries, innovation, telecommunications, research & development, precision engineering, agriculture and tourism employment.
- Identify lands in key strategic locations that may be suitable for specific sectors.
- Identify sufficient and suitable lands for development of enterprise/ industrial uses throughout the County by identifying suitable sites in towns & villages in the zoning provisions of local and village plans.
- Identify enterprise/ industrial/ services sites in smaller settlements through the zoning of lands in local area plans.
- Identify sufficient and suitable lands at key locations within the Tralee/ Killarney/ Castleisland development corridor for industrial/ enterprise use. The Development Plan notes that, given the significant potential of airport associated development, a site in the region of 50 Hectares will be required.
- Make provision for office development in towns throughout the County and for Office Parks within or in the environs of towns in the Tralee/ Killarney/ Castleisland Development Corridor.

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2.12 Social Housing

In its role as a Housing Authority, Kerry County Council provides dwellings for households in need of accommodation and which are unable to provide such accommodation through their own resources. In the provision of housing, the Council proposes to actively pursue the widest geographical dispersal throughout the County including small settlements and nodes thereby sustaining rural populations and assisting development which will retain and strengthen the fabric of these communities.

The *2003-2009 County Development Plan* includes the following objectives in the Housing Strategy:

- To actively participate in the housing sector through the provision of infrastructure and serviced land for social, voluntary and private housing.
- To facilitate the housing needs of people in their local communities through actively providing/assisting the provision of housing in centres identified in the Settlement Strategy.
- To identify and acquire lands at all levels of the settlement hierarchy for social housing.

The *Development Plan* notes that, at the end of 2001, lands in the ownership of the Council for housing purposes were as follows:

Table 7: Acquired lands for Social Housing

Location/Townland	Areas of Land in Ownership (Acres)
Abbeydorney	9.71
Annascaul	1.1
Annascaul Brackloon	4.1
Ardfert	9.6
Ardfert, Farranwilliam	8.6
Ballinskelligs, Dungegan	0.5
Ballybunnion	2.5
Ballybunnion	11.8
Ballyferriter	1.6
Ballylongford	1.4
Brosna	3.1
Caherciveen	0.5
Caherciveen, Castlequin	9.1
Caherciveen, Reenrusheen	2.6
Castleisland	4.6
Castleisland, Meanus	5.5
Causeway	2.0
Dingle, Grove	6.3
Farranfore	19.3
Firies	0.6
Kenmare Community School	1.3
Kenmare, Gortamullen	16.8
Kilgarvan, Churchground	0.1
Killorglin	1.1
Killorglin, Bansha	3.6
Knocknagashel	1.1
Knocknagashel	2.6
Listowel, Ballygologue	5.7
Listowel, Ballygologue	4.1
Lixnaw	6.9
Milltown	3.8
Moyvane	3.3
Portmagee	.75
Rathmore	2.4
Tarbert, Kilpadogue	2.5
Valentia	2.1
Waterville	1.4

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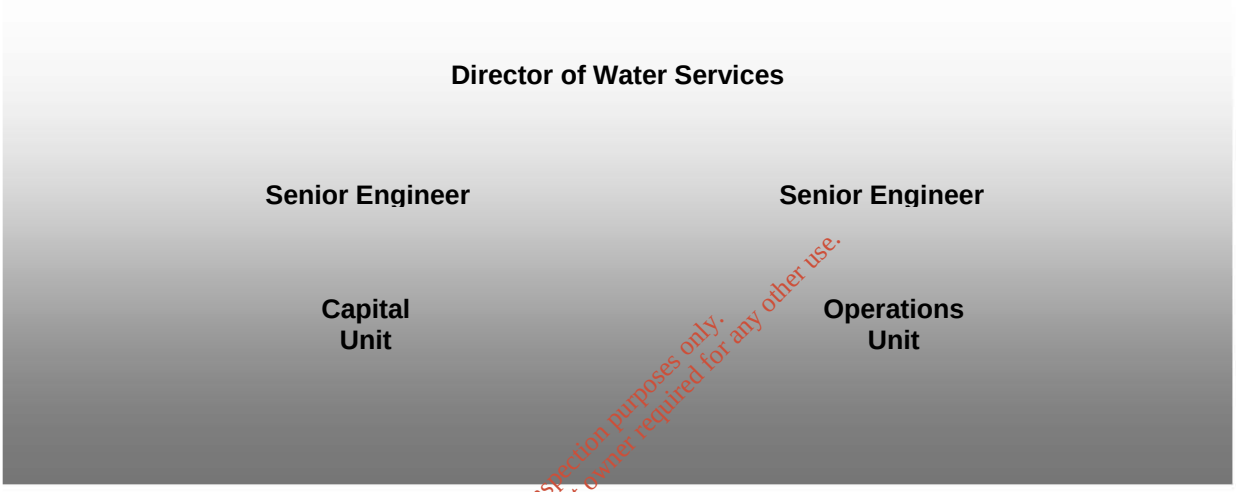
2.13 Water Services Unit - Kerry County Council

Prior to 2004, the senior management structure of the Kerry County Council Water Services Unit comprised one Senior Engineer who held responsibility for both the Capital Unit and the Operation Unit reporting to the Director of Environment and Water Services.

In recognition that the provision and maintenance of adequate water services infrastructure is a key requirement for the continuation of economic and social development of the County and in recognition of the increased activity in investment programmes, Kerry County Council revised this management structure in 2004 by the creation of a special Directorate for Water Services and the division of the Capital Unit and the Operations Unit under the management of 2 Senior Engineers.

Fig 3: 2005 Water Services Structure



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The detailed organisational staff structure in the Water Services Capital and Operations Units are as shown on Fig. 4 and Fig. 5 respectively.

In accordance with the Section 83 of the Local Government Act, on 1st January 2004, Kerry County Council took charge of the operation of all water and wastewater treatment plants in the 3 Town council areas. These included:

- Listowel Wastewater Treatment Plant
- Tralee Wastewater Treatment Plant
- Killarney Wastewater Treatment Plant
- Listowel Water Treatment Plant

Kerry County Council have entered into a 3-year temporary arrangement with the 3 Town Councils whereby the Town Councils will perform, on behalf of Kerry County Council, the functions associated with the operation of the water and wastewater networks within the respective Town Council areas. Upon completion of this 3-year agreement, Kerry County Council will take over full responsibility for the operation and maintenance of these networks.

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Fig 4. Water Services Operations – 2005 Organisational Chart

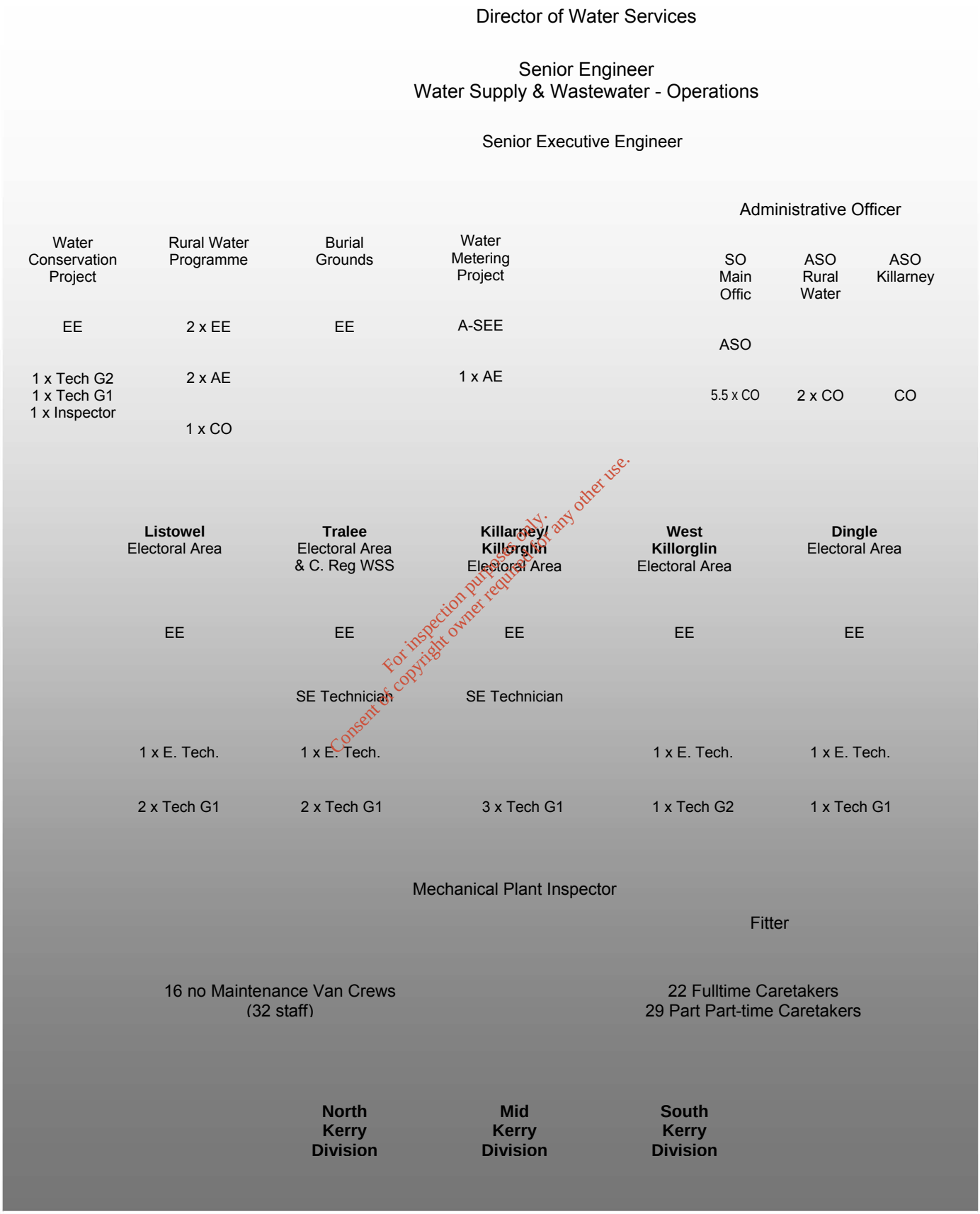

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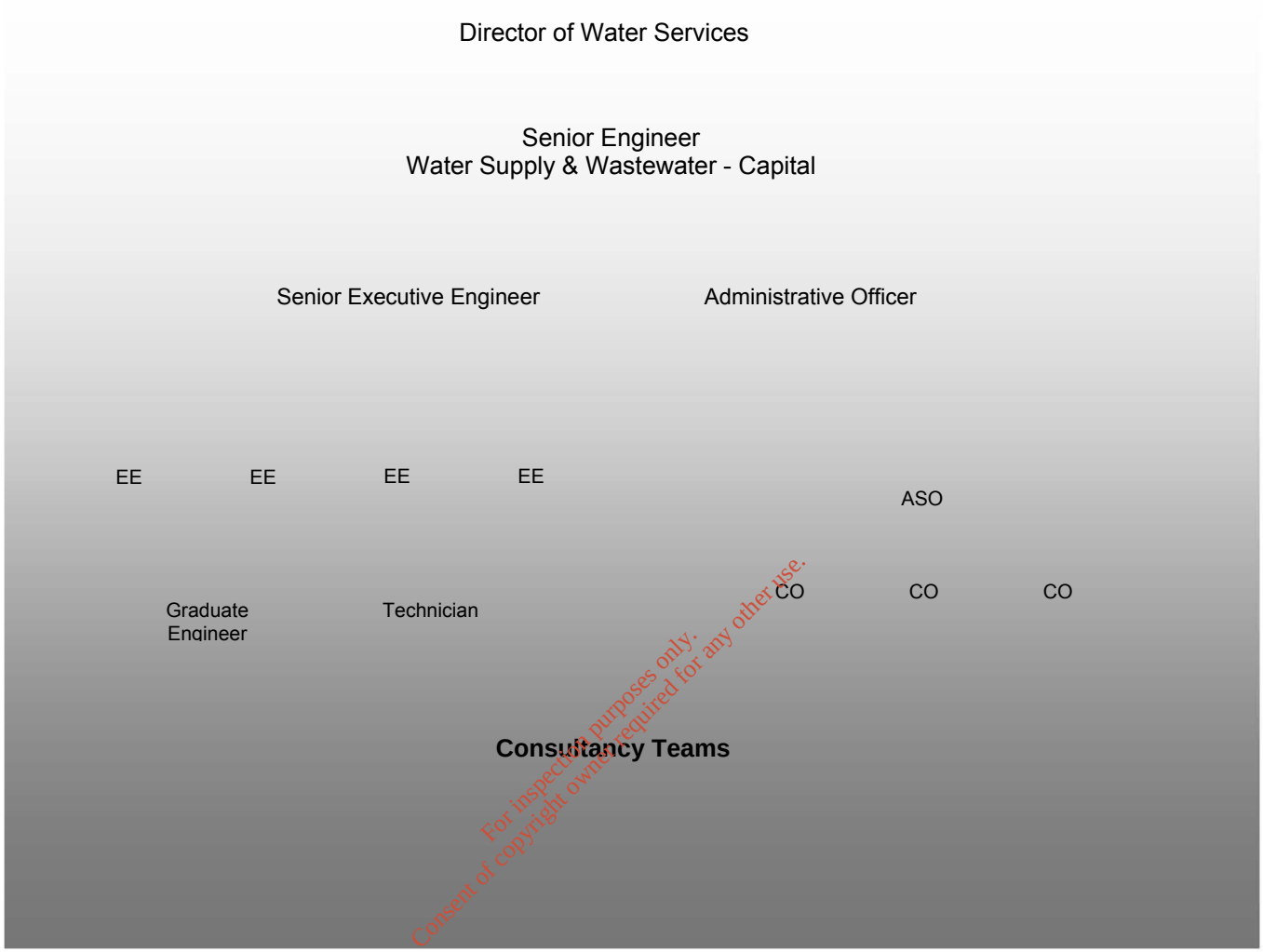
Fig 5. Water Services Capital – 2005 Organisational Chart



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2.14 Water Services Operations Unit

The Water Services Operations Unit currently hold responsibility for a broad range of areas which may be briefly summarised as follows:

2.14.1 Public Water Supplies

- With an annual budget of €5.9m., Kerry County Council produce approx. 35 million m3 of potable water annually to 41,000 customers across 70 public water supply schemes. The current water supply connection fee is 750 Euro.

- Annual income from drinking water charges amounts to €5.2m., 36% of which arises from the drinking water supplied to the 3 Town Councils in Tralee, Killarney and Listowel.

- Full-time and part-time caretakers are employed to maintain individual schemes while maintenance crews are employed to carry out improvement works and attend emergencies.

- A total of 800 new water supply connections are completed annually by direct labour crews operating under a €0.65m. budget.

- A Minor Improvement Programme provides an annual budget of €0.5m. funded from Development Levies for the improvement of the water supply infrastructure.

- Arising out of the Government Water Pricing Policy Framework, whereby all non-domestic customers are to be metered by the end of 2006, a special Metering Project Unit was established in 2004. This unit is to be funded by local resources and ultimately through commercial water charges by means of metering of the non-domestic sector to be introduced in 2005.

- Special crews are to be introduced in 2005 to cater for intensification of Water Conservation and increased activity in Water Connections.

- The *Water Quality Study* proposes an investment of €24.3m to remedy urgent water quality issues in public water supplies throughout the County. It is envisaged that a strategy study of extensive technical analysis and assessment of PPP and bundling options will be undertaken in 2005 to formulate a Water Supplies Strategy for Delivery, of similar scope to the current Wastewater Strategy for Delivery.

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2.14.2 Rural Water Programme

The County has a total of 291 Group Water Supplies, 175 of which have been taken over by the Council.

The activities handled by the Operations Unit include:

- Construction Grants for Group Water and Sewerage Schemes
- Subsidy Grants for Group Water Supply Schemes
- Refurbishment of Group Schemes prior to takeover by Council
- Grant for Individual Domestic Water Supply

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2.14.3 Public Wastewater Schemes

- With an annual budget of €3.6m, the Operations Unit operate and maintain 36 wastewater schemes.
- The operating costs of 27 smaller wastewater schemes amounts to €0.44m. while the operating costs of the 9 modern schemes amounts to €1.2m. (Ballybunnion, Cahersiveen, Castleisland, Dingle, Kenmare, Killorglin, Rathmore, Farranfore, Ballyheigue, Killarney)
- While Wastewater Services income is estimated at €1.76m., it is intended that, from 2005, in accordance with the National Water Pricing Framework, the true cost of the wastewater service will be charged to commercial customers on a water-in/water-out basis.
- It is proposed to introduce a charge of €1,500 for a 100mm. sewer connection in 2005.

2.14.4 Public Conveniences

- The Unit is responsible for the management of 29 Public Conveniences under an annual budget of €0.4m.

2.14.5 Burial Grounds

- The unit is responsible for the management of 137 No Burial Grounds under an annual budget of €0.57m.

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2.15 Development Levies

Kerry County Council is required under DoEHLG Accounting Regulations to credit income from Development Levies to the Capital Account and to adopt accrual accounting for capital expenditure such as the provision of water services and roads infrastructure which will facilitate development.

In February 2004, Kerry County Council made a Development Contribution Scheme, with effect from the 17th February, 2004 as shown on **Table 8**. Similar Schemes have been adopted in the 3 Town Council areas in Tralee, Killarney and Listowel.

Table 8: Kerry Development Levies

Development Class	Water	Sewerage	Roads
Private Dwellings (*per dwelling unit*) (Note A)	€ 1265	€ 2535	
Guesthouses/Nursing Homes (Note A)	€ 190 per bedroom	€ 60 per bedroom	
Guesthouses/Nursing Homes incorporating a Private Dwelling	Charge for Guesthouses/ Nursing Homes as outlined above plus a charge of € 1140		
Holiday/Commercial Apartments (*per unit*) (Note A)	€ 1265	€ 2535	
Hotels/Hotel Extensions (Note A)	€ 190 per bedroom	€ 60 per bedroom	
	€ 25 per sq. m. for bars, commercial areas & function rooms		
Bars & Discos	€ 25 per sq. m.		
Restaurants including Hotel Restaurant	€ 12.50 per sq. m.		
Industrial Premises/Factories/Offices	€ 12.50 per sq. m.		
Low Intensity Industrial Units or Low Intensity Warehouses	€ 1265		
Caravan Parks (Note A)	€ 760	€ 505	
	Plus € 63 per caravan pitch		
Shortfall in On-Site Car Parking provided			€ 1265
Leisure Facilities	€ 4.40 per sq. m.		
Land Use for the winning and working of materials (in excess of 10,000 tonne per annum) (Note B)			15 cents per m^3

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Note A: Where a development is not connected to a public water supply or a public sewer, the relevant development charge will not apply for the provision of such service.

Note B: Development Charge applies to extracted quantity measured per annum in excess of 10,000 tonne.

A Special Development Contribution Development, in accordance with Section 48 (2) (c) and Section 48 (12) of the Planning and Development Act 2000, will be required in respect of the following developments:-

(i) development consisting of a change of use which is likely to substantially increase the demand for water, or increase the amount of effluent, or adversely change the nature of the effluent, based on the specific nature of the change of use, and

(ii) development, which of its nature requires specific road improvement or other public infrastructural development, in whole or as part to cover such work.

Similar Development Levy Schemes have been implemented in the Town Council areas of Tralee, Killarney and Listowel.

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2.16 Public Private Partnership

The DoEHLG are committed to using the Public Private Partnership approach to deliver a significant change in the nature of infrastructure provision and operation in Ireland. It is considered that Public Private Partnerships offer a long term, sustainable approach to improving infrastructure, enhancing the value derived from government assets and making better use of public money, while at the same time allowing the Public Sector to retain control of core areas of responsibility.

Current DoEHLG policy requires that a Public Private Partnership approach should be adopted wherever it will accelerate the implementation of a particular project and represent better value for money over the full life cycle of the project. The DoEHLG recommend that the most appropriate form of PPP (DB, DBO, DBOF) should be adopted having regard to the particular circumstances of the individual project.

The DoEHLG currently favors a Design/Build/Operate approach for the provision and operation of treatment elements of water services infrastructure, with the following potential advantages:-

1) A performance specification would produce a better process solution with improved guarantee of operational performance and the opportunity to implement performance-based payments.

2) The use of long term contracts, where bidders are required to focus on the whole life-cycle cost of projects and not just on the upfront capital costs, can lead to more innovative designs with lower life-cycle costs and higher maintenance and operational standards.

3) Innovative solutions, perhaps using newer technologies would emerge, which would not be tendered as alternatives under conventional procedures or which would not be considered compliant with contract specification under conventional procedures.

4) DBO may have advantages in meeting statutory compliance in respect of environmental standards or drinking water standards in medium to long term operation.

5) There would be a better allocation of risk in particular with regard to responsibility for process design, performance guarantees and liability etc.

6) DBO would offer advantages in particular with regard to reliability of equipment and robustness of the process design, etc and would offer advantages for ongoing maintenance of the plant and equipment.

7) DBO would allow a faster project delivery than conventional procurement having regard to realistic timescales for tender document preparation and approval, tender assessment and approval, contract negotiations, construction period etc.

8) DBO would be likely to be more economically advantageous and provide better value for money, in particular over the lifecycle of the works and provide a greater certainty in construction and operational cost estimates.

Current DoHELG documentation on PPP projects in the water services sector recommends that, for existing treatment plants in both water and wastewater facilities, consideration should be given to long-term operational contracts where contract periods of greater than 5 years and up to 20 years plus may be considered for the operation, maintenance and possible capital replacement of such plants. In the case of small water and wastewater treatment works, bundling of projects under a single DBO contract is suggested, where bundles are formulated to contain a sufficient number of plants to make the rates offered by private sector service providers for the operation of the plants attractive to Local Authorities.

DoEHLG documentation notes that, while the use of DBO contracts for water and wastewater treatment plants may be expected to offer significant advantages over conventional tendering, conventional tendering procedures should continue to be used for new networks, extensions to networks and storage/attenuation projects.

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2.17 Public Private Partnership Assessment

In accordance with The DoEHLG *Policy Framework for Public Private Partnership Projects in the Water Services Sector,* a Public Private Partnership Assessment Report is the recommended framework to determine:

- whether or not to proceed with specific elements of the project by means of PPP or conventional routes.
- the form of PPP e.g. DB/DBO/DBOF.
- the allocation of risk proposed between the public and private sectors and who should have responsibility for securing the necessary statutory approvals.
- the procurement procedure to be used.

The required structure and content of the Public Private Partnership Assessment Report, as described in the DoEHLG documentation on PPP projects, will include the following sections:

- Executive Summary and Main Conclusions
- Introduction and Scope of the Assessment
- Initial Output Specification
- Preliminary Risk Assessment
- Legal Viability Assessment
- Stakeholder Consultation
- Value for Money (VFM) Assessment
- Bankability Assessment
- Procurement Options Selection - Main Findings

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Reference should be made to DoEHLG publications for detailed requirements of the above.

2.18 Public Sector Benchmark (PSB)

The Public Private Partnership Assessment Report is required to include a Public Sector Benchmark (PSB) Assessment in accordance with Circular L5/06 and the accompanying Guidance Note – "System for the Assessment and Review of PPP's within the Water and Wastewater Sector".

The PSB Assessment provides a comprehensive and detailed risk-adjusted costing of the project elements using conventional procurement over the whole life of the project.

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2.19 PPP Documentation

The Department of Environment, Heritage and Local Government have addressed the issue of Procurement by Design/Build and Design/Build/Operate in the following Documents:

- Guidance Document for the Procurement of Small Water Services Schemes – Parts A & B (DoHELG 2003)
- Circular L3/99, Water Services Investment Programme, Procurement through the use of Design/Build (DB) and Design/Build/Operate (DBO) Contracts. Interim Arrangements.
- Circular L9/99, Sludge Management
- PPP in the Water Services – Technical Note No. 2 – Preparing a PPP Assessment Report (August 2001) – Published by the Water Services Section and PPP Unit of the DoHELH.
- "Framework for Public Private Partnerships" (May 2001) developed by the Public-Private Advisory Group on PPP
- The Price Water Coopers - "A Policy Framework for Public Private Partnerships in the Water Services Sector" - (issued by Circular L10/01 replacing Circular L3/99)
- "A Policy Framework for Public Private Partnership Projects: A Report to the Department of the Environment and Local Government by Price Water Coopers et al (May, 2000) , including "Price Water Cooperhouse Guidance Notes" as follows:

    1. ***Introduction to Public Private Partnerships***
    2. ***Financial Context***
    3. ***Legal Context***
    4. ***Public Private Partnership Assessment***
    5. ***Statutory Process Assessment***
    6. ***Procurement Procedure Selection***
    7. ***Project Management***
    8. ***Stakeholder Consultation***
    9. ***Procurement Management***
    10. ***Output Specifications***
    11. ***Risk Assessment***
    12. ***Payment Mechanisms***
    13. ***Key Contractual Issues***
    14. ***Accounting Treatment***
    15. ***Contract and Performance Management***

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The above documents propose that, under Public Private Partnership arrangements, private sector contractors become long term providers of services rather than simply upfront asset builders, combining the responsibilities of designing, building, operating, maintaining and possibly financing assets in order to deliver the services needed by the public sector. As a result, central and local government agencies become increasingly involved as regulators and focus resources on service planning, performance monitoring and contract enforcement rather than on the direct management and delivery of the services.

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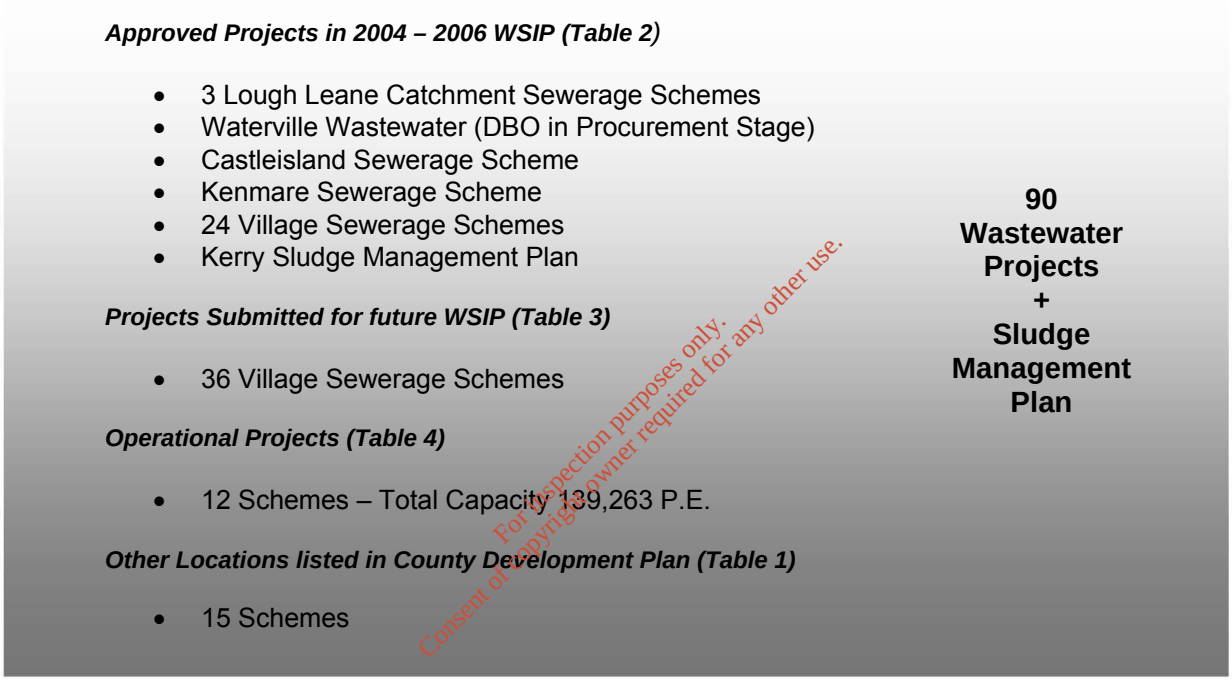
Chapter 3 – Strategy for Delivery - Concept

3.0 County Kerry Wastewater Infrastructure

As detailed in Chapter 2, the 2003-2009 County Kerry Development Plan proposes that Kerry County Council should provide the required infrastructure to support and facilitate the residential, economic and social development of 90 towns, villages and development nodes throughout the County.

The Water Services Capital Unit is required to ensure the delivery of the required wastewater infrastructure in the 90 towns, villages which are summarised as follows:

Fig 6. 90 Wastewater Projects Summary



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In consideration of the extensive scale and complex nature of the proposed new/upgraded schemes and the geographically and technically diverse level of infrastructure that is required, Kerry County Council have proposed that the execution of the proposed works under the traditional one-by-one project approach will not be cost effective and is unlikely to achieve the required efficiency in the various processes of approvals, planning, design, procurement and construction.

In response to the need to deliver the required major investment programme in a cost effective and efficient manner, it is proposed that the delivery of the proposed infrastructure will be advanced under a single integrated project – *The County Kerry Wastewater & Sludge Project*.

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3.0 County Kerry Wastewater Infrastructure (continued)

It is envisaged that the benefits of this approach will be:

- Formulation of an agreed and integrated strategy to achieve an effective and integrated programme of delivery of the required infrastructure.

- Identification of an agreed expenditure profile over the delivery period to allow both the DoEHLG and Kerry County Council to make provisions for the extensive investment programme and to formulate appropriate funding & polluter pays strategies.

- Optimisation of solution of the diverse and complex issues of planning and statutory procedures and maximisation of cost-benefit of both planning and construction phases through economy of scale.

- Identification and planning for the necessary project management structures at both technical & administrative levels that will be required in both DoEHLG and Kerry County Council to achieve efficient delivery of the required infrastructure.

- Maximisation of the potential benefits of the Public Private Partnership procurement options by creation of appropriate bulked projects to maximise private sector interest and competition.

- Identification of the optimum operational and management structure for the future extensive wastewater service in County Kerry with specific examination of the potential of Public Private Partnerships for both new and existing wastewater treatment plants.

- Introduction of best practice parameters for construction and operation that will improve the quality, performance and efficiency of the service, optimise management and operational structures to create a performance culture that eliminates unnecessary bureaucracy and provides structures for ongoing performance review and benchmark assessment.

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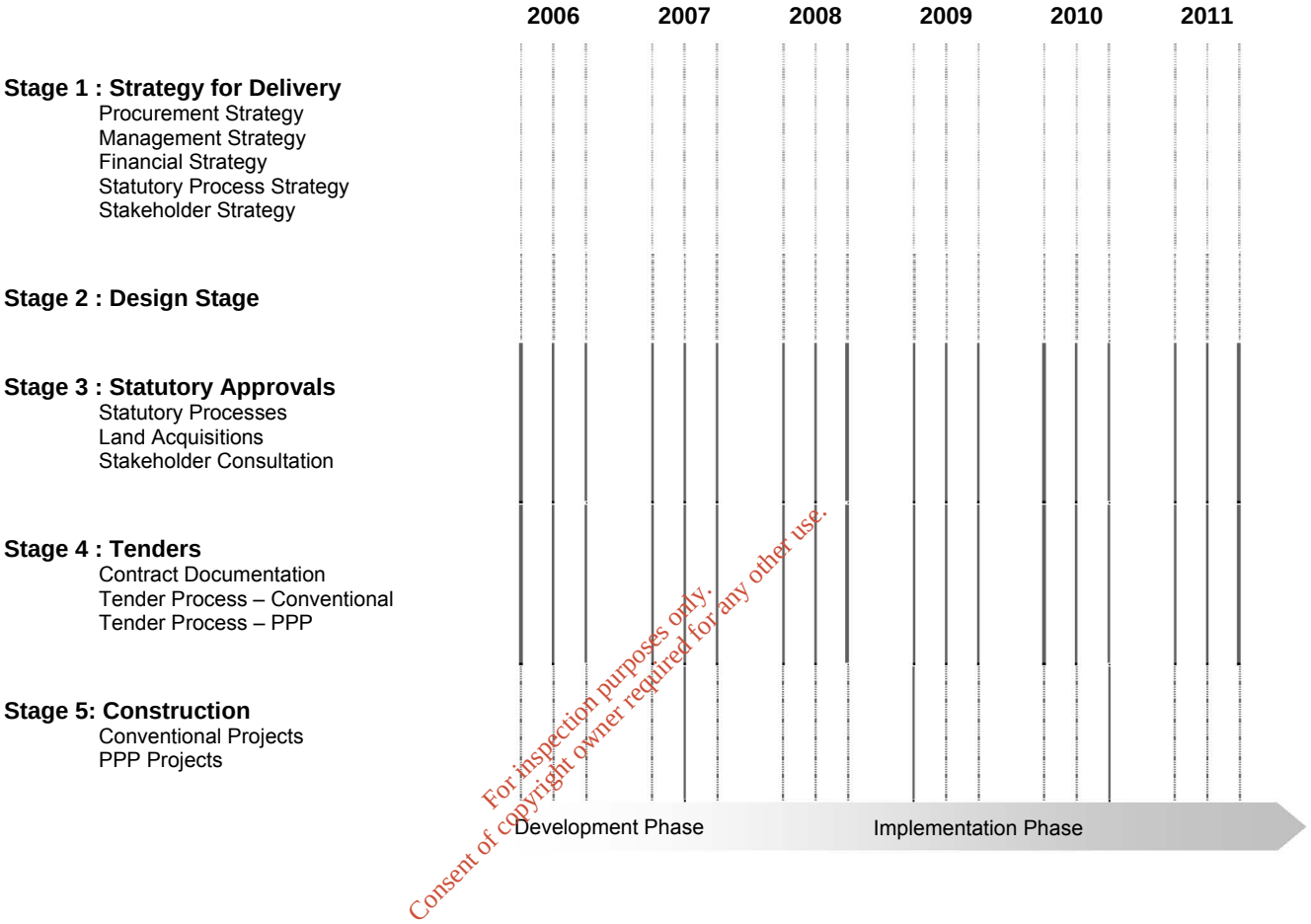
3.1 The County Kerry Wastewater & Sludge Project

The Project Plan for the *County Kerry Wastewater & Sludge Project* identifies 5 major stages with the key elements of each stage and the allocated timescale as identified Fig.7 below.

Fig. 7 : Project Plan – County Kerry Wastewater & Sludge Project



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In accordance with current DoEHLG policy, the Project Plan facilitates the formulation of a solution involving Public Private Partnership to Design/Build and/or Design/Build/Operate the wastewater treatment plants. The Project Plan also facilitates the *bundling* of traditional procurement of treatment and pipelaying works in accordance with appropriate technical or operational parameters to achieve the necessary economies of scale in all planning, approvals, financing, design, tendering and construction stages to facilitate delivery within the required deadlines.

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3.2 Stage 1 - Strategy for Delivery

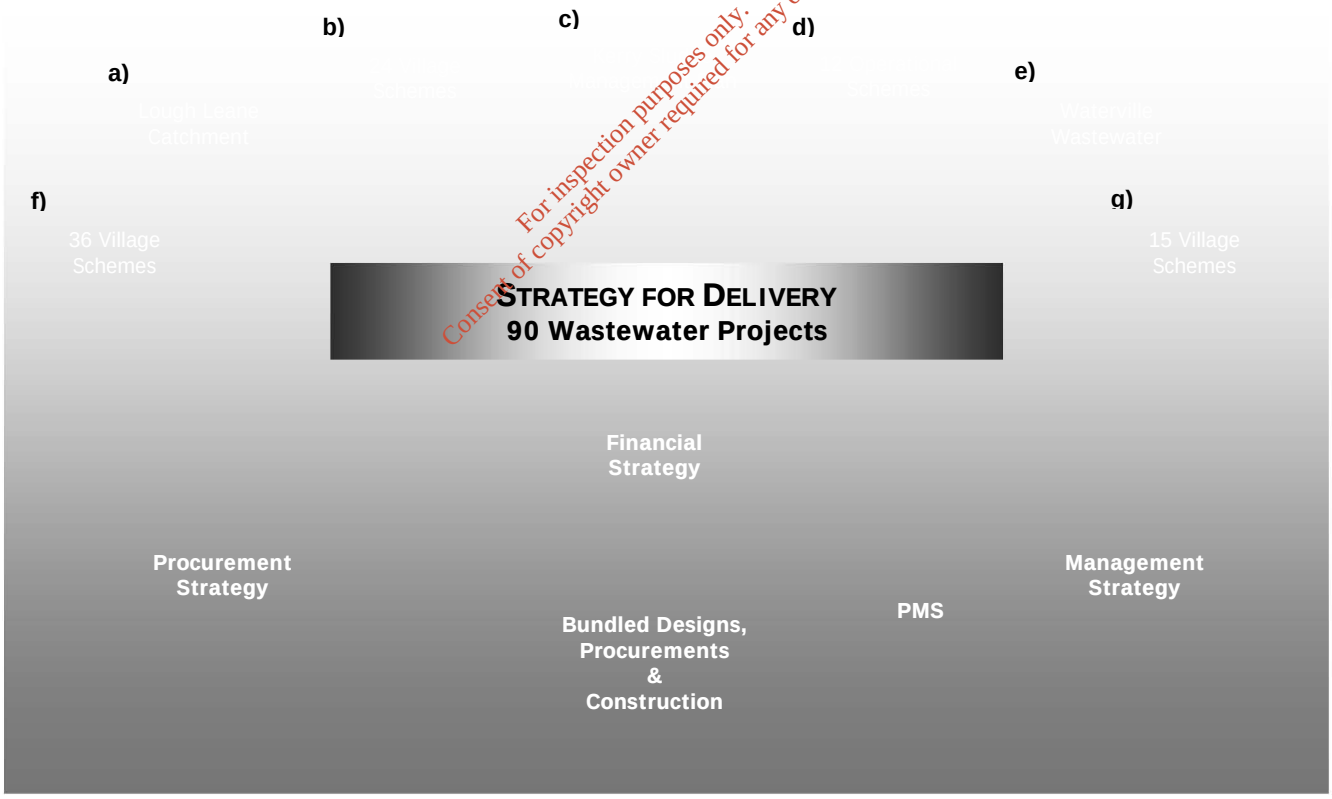
It is proposed that the Strategy for Delivery will examine the full extent of existing and proposed wastewater infrastructure in County Kerry and present options and recommendations on the following major issues:

- Procurement Strategy
- Statutory Process Strategy
- Stakeholder Strategy
- Financial Strategy
- Project Management Strategy

The Strategy for Delivery will be required to identify, assimilate and collate technical and operational parameters on the following 90 projects:

a) Lough Leane Catchment Sewerage Schemes
b) 24 Village Sewerage Schemes (Table 2)
c) Kerry Sludge Management Plan
d) 12 Operational Schemes (Table 4)
e) Waterville Sewerage Scheme (Currently at Contract Document Stage)
f) 36 Village Sewerage Schemes (Table 3)
g) 15 Village Sewerage Schemes (County Development Plan)

Fig 8: Project Plan - County Kerry Wastewater & Sludge Project



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The 24 projects referred to in **b)** above include proposed projects in the villages of **Firies**, **Milltown and Beaufort** for which Kerry County Council completed Preliminary Reports in 2004/2005.

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Chapter 4 – Strategy for Delivery - Advance Study

4.0 General

As described in Chapter 3, Kerry County Council propose to address the procurement, management and operation of new and upgraded wastewater infrastructure in 90 towns, villages and development nodes throughout the County under the *County Kerry Wastewater & Sludge Project*.

While the county-wide delivery of the wastewater infrastructure will be achieved in accordance with the Strategy for Delivery, Kerry County Council have identified a list of village locations for which the provision of wastewater infrastructure has been prioritised.

In the interest of facilitating the advancement of the delivery of the wastewater infrastructure at the priority locations, an **Advance Study** has been progressed in parallel with the Strategy for Delivery requiring the preparation of a set of **Preliminary Reports for 28 Villages,** to be procured under 4 separate appointments as follows:

- Brief 1 North Kerry - 7 Nr. Villages
- Brief 2 Mid Kerry - 7 Nr. Villages
- Brief 3 West Kerry - 7 Nr. Villages
- Brief 4 South Kerry - 7 Nr. Villages

Each Brief requires the identification of wastewater infrastructure at the specified locations and includes the identification of Development Boundaries, the preparation of a schedule of land acquisitions and wayleave agreements and the securing of planning and all other statutory processes.

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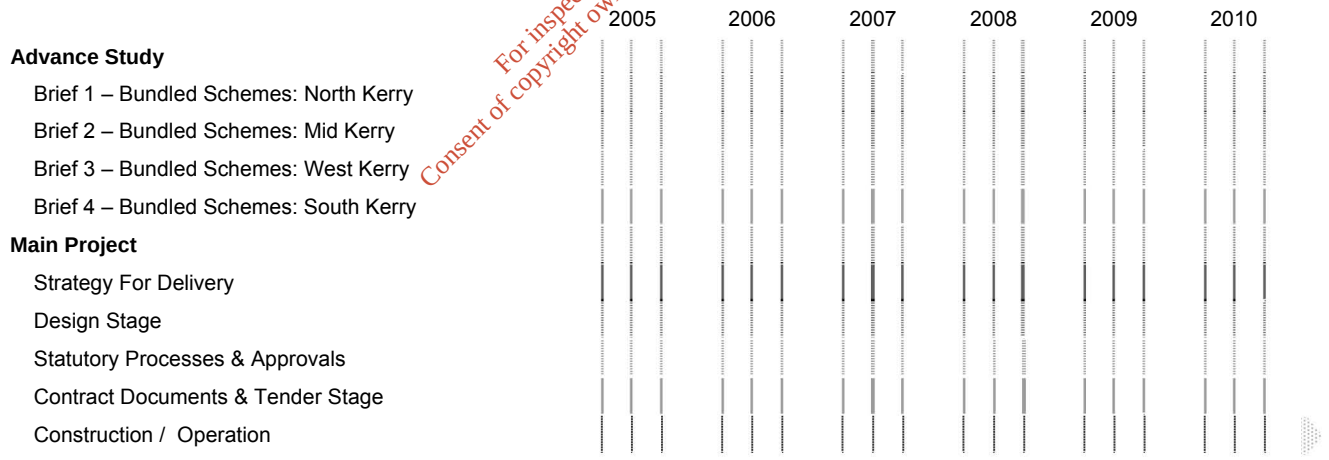
Fig. 9 : Project Plan – County Kerry Wastewater & Sludge Project



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4.1 Extent of Advance Study

The **Advance Study** is to be awarded under 4 separate contracts, each of which will be required to independently deliver the specified 7 Preliminary Reports and associated services. Each Preliminary Report will present the optimum technical solution to the wastewater infrastructure that is required at the specified locations to cater for existing and future development and to achieve the appropriate treatment standards and effluent discharge standards in accordance with national legislation and in accordance with the requirements of local discharge and water quality protection conditions.

The 4 Appointments, addressing the existing and future requirements at 28 village/small town locations in the general North, Mid, West and South Kerry areas are as listed on Table 9.

Table 9. – 28 Villages

Project	Village Location	Estimated Existing Agglomeration	Existing Infrastructure
Appointment No 1 North Kerry	Tarbert	1,400	Overloaded
	Ballylongford	950	Overloaded
	Asdee	170	None
	Cashen	120	None
	Ballyduff	850	Overloaded
	Finuge	320	None
	Lixnaw	1,000	Overloaded
Appointment No 2 Mid Kerry	Abbeydorney	437	Overloaded
	Kilflynn	170	Overloaded
	Ardfert	1,100	Overloaded
	Fenit	1,000	Overloaded
	Spa	424	None
	Currow	360	None
	Scartaglen	350	None
Appointment No 3 West Kerry	Brandon	200	None
	Castlegregory	582	Overloaded
	Aughacasla	200	None
	Annascaul	634	Overloaded
	Boolteens	170	None
	Castlemaine	565	Overloaded
	Cromane	200	None
Appointment No 4 South Kerry	Glenbeigh	2,000	Overloaded
	Chapeltown	300	None
	The Glen	75	None
	Caherdaniel	300	None
	Sneem	950	Overloaded
	Kilgarvan	311	Overloaded
	Glenflesk	100	None

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The above projects have been simply bundled, for the purpose of the Advance Study, on the basis of geographical location.

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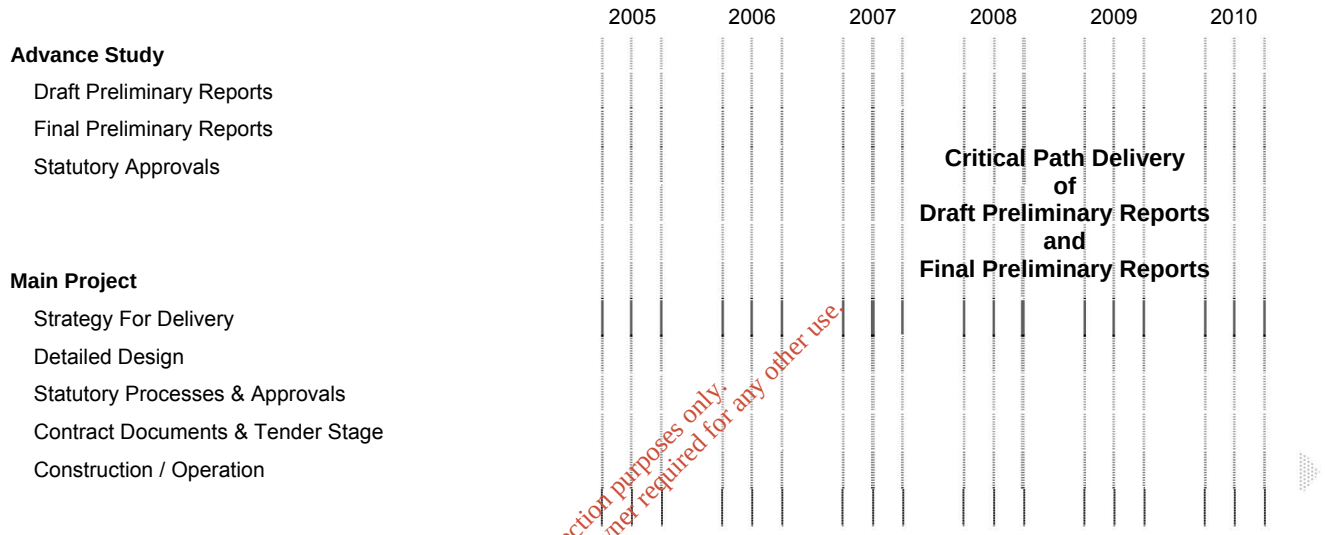
4.2 Preliminary Report – Delivery Schedules

The key delivery dates specified in the Advance Study are:

- Draft Preliminary Reports to be delivered within **6 months** from the date of the award of the contract.
- Final Preliminary Reports to be completed and delivered within **9 months** from the date of the award of the contract.

Fig 10: Critical Paths – Advance Study



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In recognition of the short timescale available for the preparation of the 28 Draft Preliminary Reports, the Advance Study has been structured as 4 separate Appointments to facilitate delivery within the required timescales.

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4.3 Advance Study – Key Deliverables

The Project Brief of the Advance Study requires the preparation of 28 Preliminary Reports including the following key deliverables:

a) Identification of the scale, density, location and phasing of future development through the preparation of Development Boundary Maps for each location in agreement and in conjunction with the Forward Planning Unit of Kerry County Council.

b) Identification of existing and future wastewater loadings and the required treatment standards and discharge locations, with phasing where appropriate.

c) Technical assessment of the existing and/or proposed receiving waters to ensure that the receiving waters will meet the relevant local and/or national water quality objectives or statutory requirements.

d) Technical survey and assessment of existing storm water and wastewater infrastructure at the 28 locations and formulation of phased proposals for the provision of upgraded or new wastewater infrastructure to serve the future needs in the area.

e) Detailed estimates for the capital, operational and maintenance costs of the recommended solutions, relevant alternatives and phased proposals.

f) Water Pricing Policy Report with analysis on supply/demand on the wastewater treatment plants and marginal costs entailed in the collection, pumping, treatment and sludge disposal to non-domestic loads and future domestic loads.

g) Preparation of Lands and Wayleave schedules and drawings for Phase 1 works at priority locations.

h) Undertaking of land acquisition and wayleave negotiations for Phase 1 works at priority locations.

i) Proposals on management/operation requirements of the completed projects and costs based on manpower, skills, materials, related costs etc. for each scheme.

j) Identification of a schedule of all statutory and other approvals that may be required in the construction of Phase 1 of the proposed works at each village location.

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4.4 Public Private Assessment Policy Reports

As it is proposed that the 28 Preliminary Reports that are to be prepared under the Advance Study will be incorporated into the *Procurement Strategy* to be prepared under the Strategy for Delivery of the *County Kerry Wastewater & Sludge Project*, the preparation of Public Private Assessment Policy Reports are not a requirement of the Preliminary Reports prepared under the Advance Study.

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Chapter 5 - Strategy for Delivery - Technical Assessments

5.0 General

The Consultant/Consortium appointed to the current study will be required to formulate an integrated strategy for the procurement, delivery, financing and operation of wastewater infrastructure at 90 towns, villages and development nodes throughout County Kerry as listed on **Table 1**.

In the formulation of the Strategy for Delivery the Consultant/Consortium will be required to undertake Technical Assessments at each of the 90 settlements to establish a phased and integrated framework for the provision of the wastewater & sludge infrastructure throughout County Kerry. The nature and extent of the Technical Assessment that will be necessary at each settlement will vary in accordance with the status of existing and proposed development of the wastewater infrastructure in each settlement.

To assist in the identification of the inputs and outputs that will be required from the Consultant/Consortium in the preparation of technical assessments, the 90 settlements have been classified into **7 Categories** as listed in **Table 10**.

Table 10 : 90 Settlements : 7 Categories

Category	No. of Settlements	Description
A	1	Contract Documents were completed in 2005 for the Waterville Wastewater Scheme, involving the construction of a new wastewater network and treatment plant. DBO procurement is proposed with a 2-year Commission/Operate phase to facilitate the integration of the project into the county-wide Operate Strategy to be identified under the Strategy for Delivery. It is expected that the Tender Process will be completed in 2006 and that the plant will be operational in 2007.
B	5	Preliminary Reports prepared by Kerry County Council that present preliminary technical solutions with phasing and estimated costs for each of the 5 locations. The solutions that have been identified have not taken into consideration the optimum technologies or management structures that may be more appropriate for the county-wide strategy. It is expected that these 5 projects will progress to Construction Stage in 2006.
C	28	Preliminary Reports prepared under the Advance Study will present preliminary technical solutions with phasing and estimated costs for each of the 28 locations. The solutions that will be identified will not have taken into consideration the optimum technologies or management structures that may be more appropriate for the county-wide strategy. A development programme for these projects will be identified under the Strategy for Delivery.
D	12	12 existing town wastewater schemes throughout County Kerry
E	17	17 existing settlements where existing wastewater infrastructure is overloaded or requires expansion/upgrading.
F	12	No wastewater infrastructure currently exists at these settlements and they have been included in the Kerry County Council Assessment of Needs 2003 and submitted to the DoEHLG for inclusion in a future WSIP.
G	15	No wastewater infrastructure currently exists at these settlements and, while the 2003-2009 County Development Plan includes the 15 settlements in the Settlement Strategy, they have not been included in the Kerry County Council Assessment of Needs 2003.
Total	***90***	

The specific settlements which fall within each of the above classifications and the status of the wastewater infrastructure at each settlement is summarised on **Table 11.**

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Table 11 : Status of 90 Settlements

Category	Settlement Name	Estimated Existing Agglomeration (P.E)	Existing Infrastructure		
			Treatment Design Capacity (P.E.)	Approx. Networks Km.	Other Comment
A (1)	Waterville	1,926	500	5.17	Proposed scheme at Contract Document Approval Stage
B (5)	Barraduff	250	None	None	No Existing Infrastructure
	Beaufort	350	None	None	No Existing Infrastructure
	Fieries	750	100	0.94	Overloaded
	Kilcummin	399	None	None	No Existing Infrastructure
	Milltown	1,474	370	3.60	Overloaded
C (28)	Tarbert	1,400	710	5.76	Overloaded
	Ballylongford	950	None	3.59	Overloaded
	Asdee	170	None	None	No Existing Infrastructure
	Cashen	120	None	None	No Existing Infrastructure
	Ballyduff	850	300	4.10	Overloaded
	Finuge	320	None	None	No Existing Infrastructure
	Lixnaw	1,000	300	2.93	Overloaded
	Abbeydorney	437	350	2.04	Overloaded
	Kilflynn	170	150	1.17	Overloaded
	Ardfert	1,100	450	5.54	Overloaded
	Fenit	1,000	400	8.04	Overloaded
	Spa	424	None	None	No Existing Infrastructure
	Currow	360	None	None	No Existing Infrastructure
	Scartaglen	350	None	None	No Existing Infrastructure
	Brandon	200	None	None	No Existing Infrastructure
	Castlegregory	582	300	2.84	Overloaded
	Aughacasla	200	None	None	No Existing Infrastructure
	Annascaul	634	250	2.20	Overloaded
	Boolteens	170	None	None	No Existing Infrastructure
	Castlemaine	565	250	4.59	Overloaded
	Cromane	200	None	None	No Existing Infrastructure
	Glenbeigh	2,000	500	3.41	Overloaded
	Chapeltown	300	None	None	No Existing Infrastructure
	The Glen	75	None	None	No Existing Infrastructure
	Caherdaniel	300	None	None	No Existing Infrastructure
	Sneem	950	500	2.55	Overloaded
	Kilgarvan	311	200	2.16	Overloaded
	Glenflesk	100	None	None	No Existing Infrastructure

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Table 11 : Status of 90 Settlements

Category	Settlement Name	Estimated Existing Agglomeration (P.E)	Existing Infrastructure		
			Treatment Design Capacity (P.E.)	Approx. Networks Km.	Other Comment
D (12)	Ballybunnion	3,003	8,180	2.70	Commissioned 1992
	Ballyheigue	832	4,534	23.20	Commissioned 2003
	Cahersiveen	1,621	5,000	13.79	Commissioned 1995
	Castleisland	4,353	6,000	11.30	Commissioned 1992 Preliminary Report prepared in 2001 proposing further expansion of networks and treatment.
	Dingle	4,820	8,600	13.14	Commissioned 1995
	Farranfore	167	550	1.99	Commissioned 2004
	Kenmare	7,600	3,500	16.77	Commissioned 1995 Overloaded
	Killarney/Fossa	20,000	42,000	77.00	Upgraded 1998 Expansion required to accommodate expansion of town boundaries.
	Killorglin	5,982	5,000	22.77	Commissioned 1995
	Listowel	6,621	12,500	23.41	Commissioned 1987 Nutrient Reduction to be installed 2006
	Rathmore	503	1,750	5.36	Constructed 1950's Upgraded 2001
	Tralee	13,467	40,300	122.89	Commissioned 1998 Nutrient Reduction to be installed 2006
E (17)	Ballydavid	136	150	0.75	Constructed 1970's. Septic Tank
	Ballyferriter	544	500	4.00	Imhoff Tank, Overloaded
	Brosna	373	250	1.78	Imhoff Tank, Overloaded
	Causeway	703	250	3.00	Imhoff Tank & Percolating Filters, Overloaded
	Cloghane	276	none	0.3	No infrastructure Untreated discharge to Brandon Bay.
	Duagh	348	250	1.40	Imhoff Tank, Overloaded
	Dungeagan / Ballinskelligs	690	300	4.0	Septic Tank, Overloaded
	Feohanagh	152	100	1.2	Septic Tank, Overloaded
	Gneeveguilla	325	550	2.5	Extended Aeration System
	Kilfenora	195	90	1.0	Septic Tank, Overloaded
	Knightstown	795	800	4.5	Septic Tank
	Knocknagoshel	294	200	2.0	Septic Tank, Overloaded
	Moyvane (Newtown Sandes)	717	450	2.5	Imhoff Tank, Klargester, Sludge Vermicompostor, Overloaded
	Murreagh	265	140	1.7	Septic Tank, Overloaded
	Portmagee	382	140	1.4	Septic Tank, Overloaded
	Rossbeigh	291	200	0.8	Septic Tank, Overloaded
	Ventry	239	200	0.9	Septic Tank, Overloaded

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Table 11 : Status of 90 Settlements

Category	Settlement Name	Estimated Existing Agglomeration (P.E)	Existing Infrastructure		
			Treatment Design Capacity (P.E.)	Approx. Networks Km.	Other Comment
F (12)	Camp	<300	None	None	--
	Castlecove	<150	None	None	--
	Currans	<150	None	None	--
	Dunquin	<300	None	None	--
	Inch	<200	None	None	--
	Kells	<200	None	None	--
	Knockanure	<200	None	None	--
	Lauragh	<200	None	None	--
	Lispole	<200	None	None	--
	Lisselton	<200	None	None	--
	Templenoe	<150	None	None	--
	Tuosist	<150	None	None	--
G (15)	Ballyfinnane	<200	None	None	--
	Ballyhar	<100	None	None	--
	Ballymac/ Clogher	<300	None	None	--
	Bunane	<100	None	None	--
	Cordal	<200	None	None	--
	Faha/Listry	<150	None	None	--
	Fahamore	<200	None	None	--
	Glencar	<150	None	None	--
	Kilgobnet	<200	None	None	--
	Kilmoyley	<300	None	None	--
	Lyrecrompane	<150	None	None	--
	Mastergeehy	<150	None	None	--
	Reenard	<200	None	None	--
	Stradbally	<200	None	None	--
	Tahilla	<150	None	None	--

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5.1 Forward Planning

5.1.1 Forward Planning - Status

As part of the *Strategy for Delivery*, the Technical Assessments will identify the location, extent, scale, and phasing of future development that is to be serviced in the design and phasing of the wastewater projects at the 90 settlements. In accomplishing this work the Consultant/Consortium shall refer to the existing Local Area Plans where available, and for other settlements, shall prepare Development Boundary Maps as defined in Section 5.1.2.

In accordance with the advance-planning approach that has been emphasised in the Planning & Development Act 2000, Kerry County Council has initiated a programme of preparation of Local Area Plans for the towns and villages in the County. However, due to resource limitations, is not envisaged that the completion of all of these plans will be achieved prior to the commencement of, or during, the preparation of the Strategy for Delivery. A summary of the status of the Forward Planning at the various settlements is presented on **Table 12**.

Table 12: Status of Forward Planning

Category	Status of Forward Planning
A, B and C.	As part of the preparation of Preliminary Reports for these settlements in 2004-2006, Forward Planning, for a 20 year period, was prepared identifying the extent and phasing of future development at the **34 settlements** listed under Categories A, B and C.
D	Forward Planning, for a 6-year period, identifying the extent (not phasing) of future development has been identified in the form of Local Area Plans, Town Development Plans, Masterplan Plans and Other Plans at the **6 settlements** : • Castleisland • Kenmare • Killarney • Killorglin • Listowel • Tralee. Forward Planning is not available for the **6 settlements**: • Ballybunnion • Ballyheigue • Cahersiveen • Dingle • Farranfore • Rathmore
E	Forward Planning is not available for the **17 settlements** listed under Category E.
F.	Forward Planning is not available for the **12 settlements** listed under Categories F.
G.	Forward Planning is not available for the **15 settlements** listed under Categories G.

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5.1.1 Forward Planning – Status (Continued)

Table 12 shows that, while Forward Planning data providing the extent and phasing of 20-year projected development will be available to the Consultant/Consortium at **34 Settlements**, further forward planning work is required to identify 20-year extents and phasing of projected development at the following **56 settlements**:

- **12 Settlements – Category D**
- **17 Settlements – Category E**
- **12 Settlements – Categories F**
- **15 Settlements – Categories G**

The 20 year extents and phasing of projected development at these 56 settlements shall be identified as described in Paragraphs 5.1.2.

5.1.2 Forward Planning – Category D, E, F & G

In the absence of complete Forward Planning (extent & phasing) at **56 settlements** listed under Categories D,E,F & G, the scale and phasing of future wastewater infrastructure at these settlements shall be based on Development Boundary Maps to be prepared under the Strategy for Delivery.

The preparation of Development Boundary Maps will involve the following:

a) Review of existing developments and planning applications that have been granted by Kerry County Council or are under examination.

b) Liaison with and taking instruction from Kerry County Council Forward Planning Unit on the scale and density of development envisaged at the listed settlements and quantification of future growth in terms of the type, scale, density and location of development anticipated for each settlement.

c) Preparation of development boundaries for each settlement having regard to existing zonings and plans if any, existing plannings, environmental and development constraints, natural drainage boundaries, etc.

d) Identification of the appropriate phasing of development for each settlement.

e) Submission of the Development Boundary Maps to Kerry County Council Forward Planning Department for comment, refinement and agreement.

The completed Development Boundary Maps will form the basis for an assessment of the scale, nature, density, location and phasing of the wastewater infrastructure at each settlement.

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5.2 Technical Assessments

The purpose of the Technical Assessments at the 90 settlements is to inform the Consultant/Consortium in the formulation of the various elements of the Strategy for Delivery. In the development of a cost- effective Strategy for Delivery, it is important therefore to ensure that the Technical Assessments are formulated to an *appropriate* level of detail to serve their intended purpose.

To assist the Consultant/Consortium in determining the scope, inputs and outputs of the Technical Assessments, the Technical Assessments are described under the following headings:

- Inputs Required
- Outputs Required
- Appropriate Technical Detail

5.2.1 Technical Assessments – Inputs Required

In the preparation of Technical Assessments on existing and future wastewater infrastructure, the Consultant/Consortium will be required to undertake research, studies and liaison in the development of the optimum technical solutions including:

- Integration of existing Preliminary Reports & Contract Documents where available and appropriate.

- Incorporation of all local, Irish and EU wastewater, sludge and environmental Legislation and Reports in the identification of future requirements and standards that will define the infrastructure to be provided.

- Appropriate on-site inspections, surveys, research and desk-studies into operational, management, environmental and developmental issues.

- Liaison with Kerry County Council operational and management staff, Consultants, Contractors, etc. as appropriate in the identification of operational issues, maintenance routines, infrastructure capacities, deficiencies, etc.

- Analysis of Kerry County Council operational and management structures and the identification of appropriate phased strengthening of or modifications to these structures to reflect the significant development of the infrastructure.

- Liaison with Kerry County Council Forward Planning Unit in identification of existing and future development and appropriate phasing of infrastructure at the various settlements.

- Identification of capital, operational and maintenance cost estimates using appropriate unit-cost methodologies, identifying alternatives and appropriate phasing.

- Assessment of the role of Public Private Partnerships in the delivery of the optimum solutions with reference to national and international experience.

- Identification of best practice parameters for construction and operation to improve and measure operational and management performance and efficiency.

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5.2.1 Technical Assessments – Inputs Required (Continued)

The level of inputs required at each settlement will vary in accordance with the Category within which the settlement falls. The minimum level of inputs required for each Category shall be deemed to include, and shall not be limited to, those indicated in **Table 13**.

Table 13 : Technical Assessments - Inputs

Settlement Category	No Of Settlements	Review Existing PR	Review Existing CD	Site Visit & Assessment	Consultation with Operators/Caretakers	Prepare Development Boundary Maps & Phasing	Identification of Design Population & Phasing	Consultation with Forward Planning	Collection Systems	Effluent Standards & Disposal	Treatment Works	Sludge	Statutory Processes	Update and/or Prepare Cost Estimates	Review/Identify Phasing
A	1	●	●	●	●			●						●	●
B	5	●	●	●	●			●						●	●
C	28	●		●	●			●						●	●
D	12	●	●	●	●	●	●	●	●	●	●	●	●	●	●
E	17			●	●	●	●	●	●	●	●	●	●	●	●
F	12			●		●	●	●	●	●	●	●	●	●	●
G	15			●		●	●	●	●	●	●	●	●	●	●

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5.2.2 Technical Assessments –Outputs Required

The output from the Technical Assessments should present the technical analysis, solutions and options to an appropriate extent and level of detail for each settlement. The required outputs should be seen as the inputs to the various strategies to be developed and should include, but not be limited to, the following:

- The scale, nature and phasing of the wastewater and sludge infrastructure that is required to accommodate existing and future development at each settlement
- The county-wide technical solution for sludge treatment and disposal with a phased implementation programme that is integrated with the phased development of wastewater infrastructure at the various settlements.
- The strategic technical function of wastewater infrastructure at each settlement in the county-wide wastewater and sludge strategy and phased implementation programme.
- Capital and Operational cost estimates for the existing and proposed county wastewater and sludge infrastructure with an expenditure profile to reflect an appropriate and achievable phased development programme.
- The appropriate phased construction programme for existing and proposed wastewater and sludge infrastructure.
- Water Charging Pricing Policy Report with strategic marginal costs analysis on phased development of the wastewater & sludge infrastructure with respect to non domestic loads, in accordance with Circulars L16/02 on Consolidation of Water Services Pricing Policy and all relevant Circulars.
- A schedule and programme of detailed technical studies or other actions that are recommended to be undertaken to progress the Strategy for Delivery to the Design, Procurement, Construction and Operate Stages.

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5.2.3 Technical Assessments – Appropriate Technical Detail

In determining the *appropriate* level of technical research to be undertaken and the *appropriate* level of technical detail to be presented in the Technical Assessments, the Consultant/Consortium should take particular note that the sole purpose of the Technical Assessments is to inform the Strategy for Delivery in the formulation of the various components of the Strategy for Delivery. In this regard, it should be particularly noted that Kerry County Council do not anticipate that the Technical Assessments will be referenced for any other purpose.

The Technical Assessments should be based on an *appropriate* level of technical research and should be presented at an *appropriate* level of technical detail to facilitate the identification of the scale, nature, phasing and estimated costs of the required infrastructure.

It is anticipated that the Technical Assessments would involve the following levels of technical research and level of detail:

Wastewater Networks & Loadings

- technical research to identify (in settlements where networks currently exist) the merits or otherwise of existing trunk foul and surface water networks on the basis of site inspection, operational history and desk-studies.

- technical detail to present the phased development of the foul and surface trunk networks to cater for future development on the basis of desk-study and framework methodologies.

- technical detail to identify cost estimates of the phased development of the networks on the basis of appropriate unit cost methodologies.

Treatment Plants

- technical research to identify (in settlements where treatment currently exists) the merits or otherwise of existing treatment systems and discharge location on the basis of site inspections, operational history and desk-studies having regard to future phased loading and discharge standards.

- technical detail to identify the appropriate technology and phased development of the treatment infrastructure at the 90 settlements to cater for future loadings of wastewater and sludge having regard to existing and/or proposed discharge locations and water quality standards to be achieved.

- technical detail to identify cost estimates of the phased development of the treatment infrastructure, including sludge and discharge arrangements, on the basis of unit cost methodologies.

Where framework and unit-cost methodologies are adopted, these should be documented and should be based on experience gained on similar infrastructure under similar conditions.

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5.3 General Requirements – Technical Assessments

Technical Assessments shall be prepared and presented in accordance with the following general requirements:

a) Where options are available, the preferred solution shall be identified and clearly presented having considered the best technical and the most cost beneficial solution. When considering alternative options, unit cost per head of population, per house and per hectare of serviced and serviceable lands shall be taken into consideration and presented.

b) Calculations relating to design populations and loadings shall take into account the latest Census figures and any other relevant predicted future trends and developments.

c) The level of treatment required will depend to a large extent on the proposed discharge point(s) and the appropriate discharge standards shall be established prior to discharge to the receiving waters.

d) Treatment proposals shall examine and report on the need to provide disinfection and nutrient reduction as part of the treatment process prior to discharge.

e) Preliminary calculations shall be presented for the treatment process design and sludge treatment & reuse/disposal options.

f) Proposals for upgrading existing networks and proposals for new networks shall provide for foul sewage and storm drainage collection systems as separate systems to the greatest extent practicable.

g) Options for the logical phasing of the construction of the project shall be examined and cost estimates shall be presented to show the costs of each phase separately.

h) Cost estimates shall include design, construction, supervision, legal, operating costs and maintenance costs for the options considered.

i) Summaries of design calculations shall clearly show why the preferred recommended collection, treatment and disposal options are chosen.

j) Final recommendations shall be based on the most economic solution and shall have undergone the application of Value Engineering Principals in order to ensure cost effectiveness in all cases.

k) Statutory requirements of any proposed solution shall be reviewed in relation to planning, general legislation, land acquisition, environmental impact and any other relevant legislation or statutory requirement.

l) A prioritised and costed programme of works shall be identified for implementation in order to satisfy the project objectives and a full breakdown of costs shall be identified relative to the various output recommendations.

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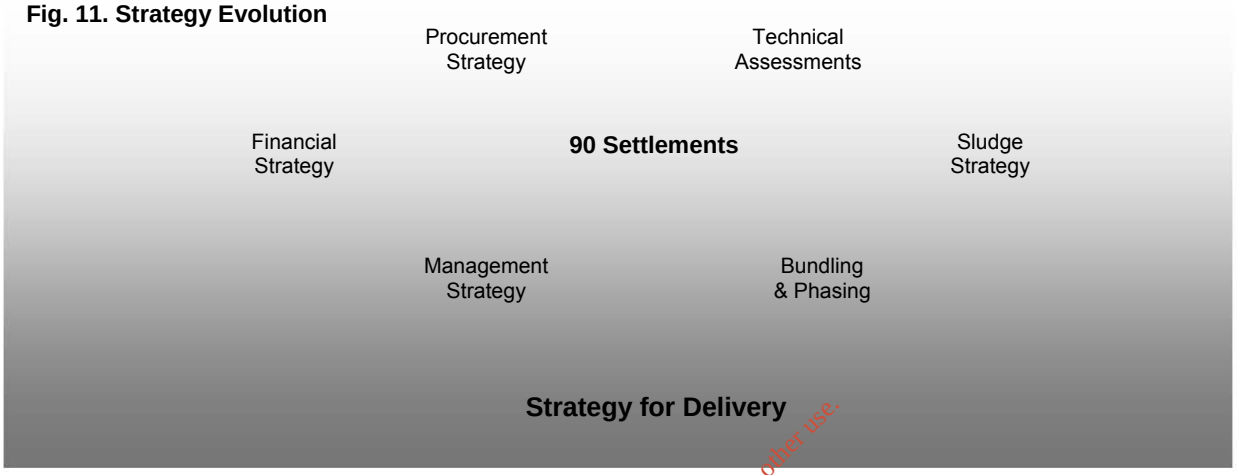
5.4 Technical Assessments & Strategy Evolution

It should be noted that the identification of the phased development of the wastewater infrastructure at each settlement will require iterative inputs and re-assessment according as the various elements of the Strategy for Delivery are formulated and according as the optimum strategic solution evolves having regard to the strategic role of each treatment plant in the integrated county-wide strategy and taking into account the appropriate bundling and Design/Build/Operate solutions to provide cost effective delivery.

Fig. 11. Strategy Evolution



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5.5 Normal Services

The following items shall be deemed to fall under the heading of “Normal Services” not subject to additional payment by the client:

a) Specialist hydrogeological advice and services.

b) Use of computers and other forms of modern technology.

c) Independent checking of calculations.

d) Liaison with the Local Authority on existing and proposed infrastructure.

e) Liaison with other Agencies, Consultants, Advisors, Local Authorities, Utilities Providers and Statutory Bodies where appropriate.

f) Delivery of all completed reports and drawings in a digital format conforming with Kerry County Council IT policies (i.e. Microsoft Word, Excel, Access, AutoCad and Mapinfo formats).

5.6 Design Parameters

All recommendations arising out of Technical Assessments shall present the basic design parameters that have been adopted and shall be in compliance with the normal parameters recommended by the DOEHLG or Kerry County Council unless particular circumstances dictate that other parameters are appropriate.

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5.7 Strategic Environmental Assessment (SEA)

In parallel with the Technical assessments and the evolving technical solution, the Consultants appointed shall undertake a Strategic Environmental Assessment in accordance with the requirements of the (SEA) Directive 2001/42/EC and the prescribed environmental authorities in Ireland:

- Environmental Protection Agency
- Department of Environment, Heritage and Local Government
- Department of Communications, Marine and Natural Resources.

The Strategic Environmental Assessment was transposed into Irish law by Regulations SI 435 and SI436 of 2004. The objective of the Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of specified plans and programmes with a view to promoting sustainable development.

5.8 Information to be Submitted

It is anticipated that a key element in the preparation of the Technical Assessments/SEA to an *appropriate* level of technical detail will be the component of the Consultant/Consortium Team that can contribute significant experience *and judgment* in the development of wastewater infrastructure.

To assist in the final selection of the Consultant/Consortium for the project, all Tender Proposals shall include a *short* description of the proposed approach to be adopted in the development of the Technical Assessments/SEA taking 3 sample settlements of varying scales as follows:

- Listowel (Category D)
- Duagh (Category E)
- Lisselton (Category F)

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The short description of the proposed approach should strive to display that the approach is considered to be at an *appropriate* level of technical detail and should display the availability and application of appropriate framework and unit cost methodologies.

All Tender Proposals shall also present the input in man-hours that has been allocated in the development of Technical Assessments/SEA at each of the 7 Categories to display the scale of input that has been allocated in the areas of:

a) Identification of extent and phasing of future development.
b) Undertaking of technical research.
c) Identification and presentation of proposed technical solution.

The above information will be taken into consideration in the Tender Award Criteria in the assessment of the professional *experience and judgment* of the project team and in the assessment of the *appropriate* scale and level of detail required in the preparation of the Technical Assessments to support of a cost-effective formulation of the Strategy for Delivery.

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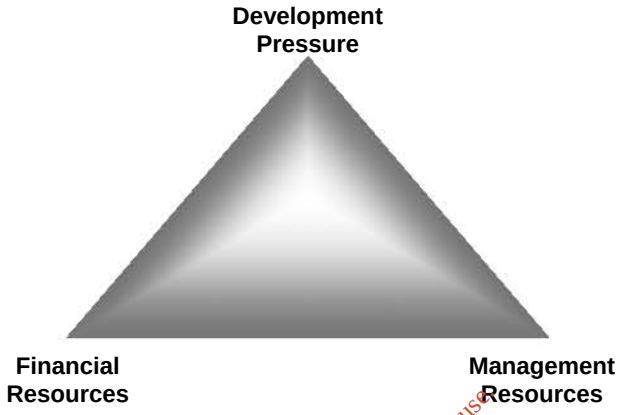
Chapter 6 – Strategy for Delivery

6.0 Strategy for Delivery

The Strategy for Delivery shall formulate and present various options that may be available and shall recommend the optimum strategy for the delivery of the wastewater infrastructure in County Kerry having considered all constraints and conflicts that may be identified in project delivery, project financing and project management.



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It is anticipated that the Strategy for Delivery will formulate distinct sets of strategies, that will be fully integrated within each other, in the following structure:

- ***Procurement Strategy***
- ***Management Strategy***
- ***Financial Strategy***
- ***Statutory Process Strategy***
- ***Stakeholder Strategy***

While the general issues and concepts, which are to be considered and addressed in the formulation of the above strategies, are discussed in this Chapter, the full extent of issues will only become apparent according as the technical, management and operational opportunities, risks and constraints of the project are examined in detail in the formulation of the Strategy for Delivery.

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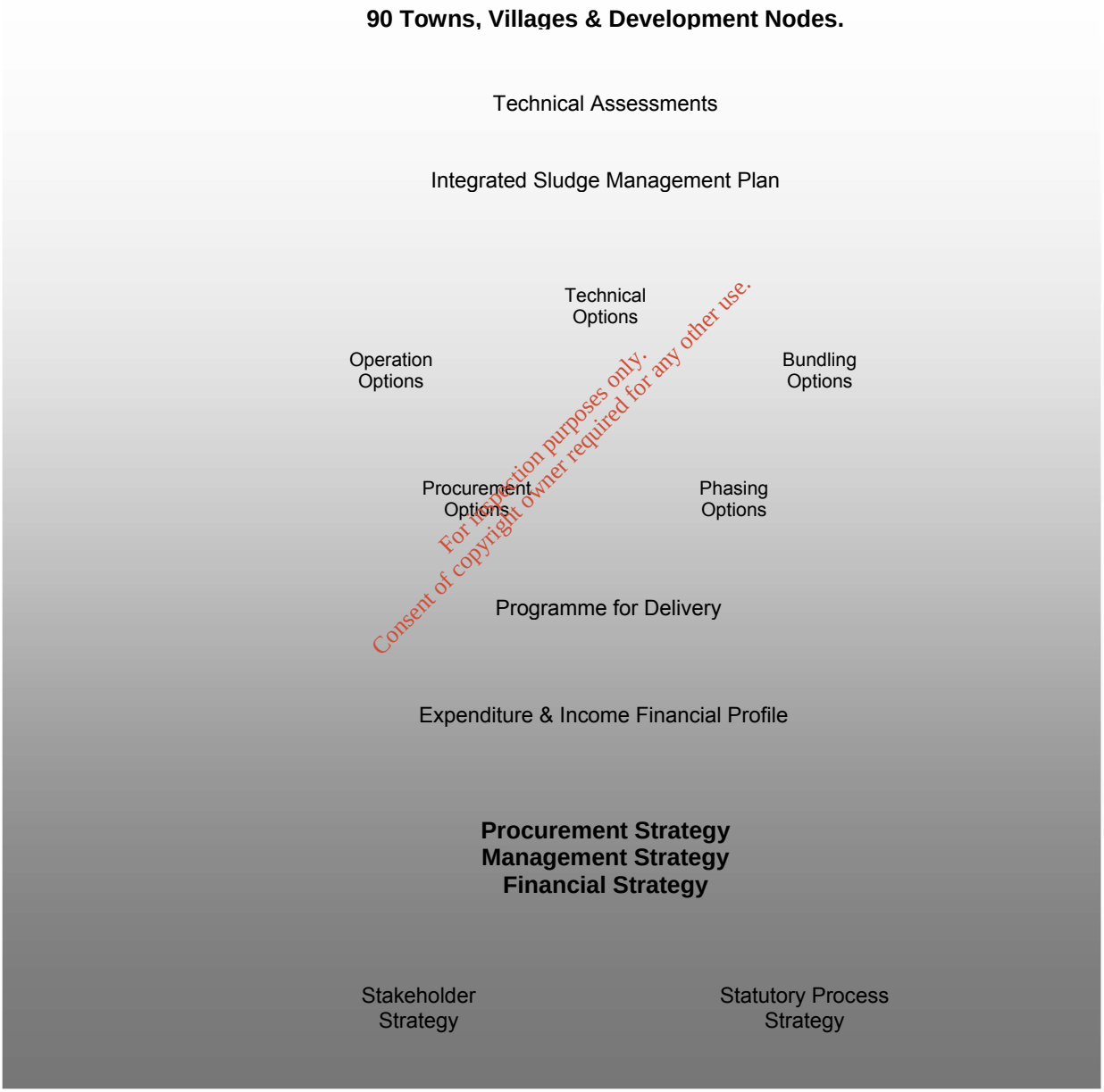
6.0 Strategy for Delivery (Continued)

It is envisaged that the Strategy for Delivery will be formulated through an iterative progression of the various issues and strategy elements to be considered whereby a logical, viable and achievable programme of works will be formulated to deliver the required projects in the required order of priority, within appropriate timeframe to accommodate and encourage development while also accommodating and/or exploiting all financial, operational, resource and other constraints and/or opportunities.

An indicative flowchart of the iterative progression that is envisaged is presented in Fig 12.

Fig 12. – Strategy for Delivery Iterations



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6.1 Procurement Strategy

The scope of the Procurement Strategy shall encompass the 3 stages of:

- ***Design Stage***
- ***Construction Stage***
- ***Operation Stage***

The Procurement Strategy shall identify options and formulate proposals and recommendations on the following key issues for each of the 3 stages of procurement (i.e. Design, Construction and Operation) :

- *Procurement Routes*
- *Project Bundling & Integration of Sludge Management*
- *Procurement Procedures*

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6.1.1 Procurement Routes

The main Procurement Routes that are likely to be considered in the strategy are:

- *Public Private Partnership Procurement*
- *Conventional Procurement*

The Procurement Strategy shall formulate a decision process that presents the optimum Procurement Route to be adopted by Kerry County Council in the procurement of the service in the 3 stages of Design, Construction and Operation. **One of the key outcomes of this decision process will be the extent to which Kerry County Council should continue in the conventional role of operator of the wastewater service and, in particular, of existing and new wastewater treatment plants.**

In accordance with The DoEHLG *Policy Framework for Public Private Partnership Projects in the Water Services Sector,* a Public Private Partnership Assessment Report is the appropriate framework for this decision process, leading to the point where a decision is clear on the favored Procurement Routes to be followed in advancing the Design, Construction and Operate elements of the Project.

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6.1.1 Procurement Routes (continued)

The Public Private Partnership Assessment Report shall examine the potential role for a Public Private Partnership (PPP) for selected elements of the proposed infrastructure to achieve improved value for money compared with conventional procurement. The Public Private Partnership Assessment Report shall include a Public Sector Benchmark Assessment in accordance with DEHLG Circular L5/06.

The PPP Assessment shall determine:

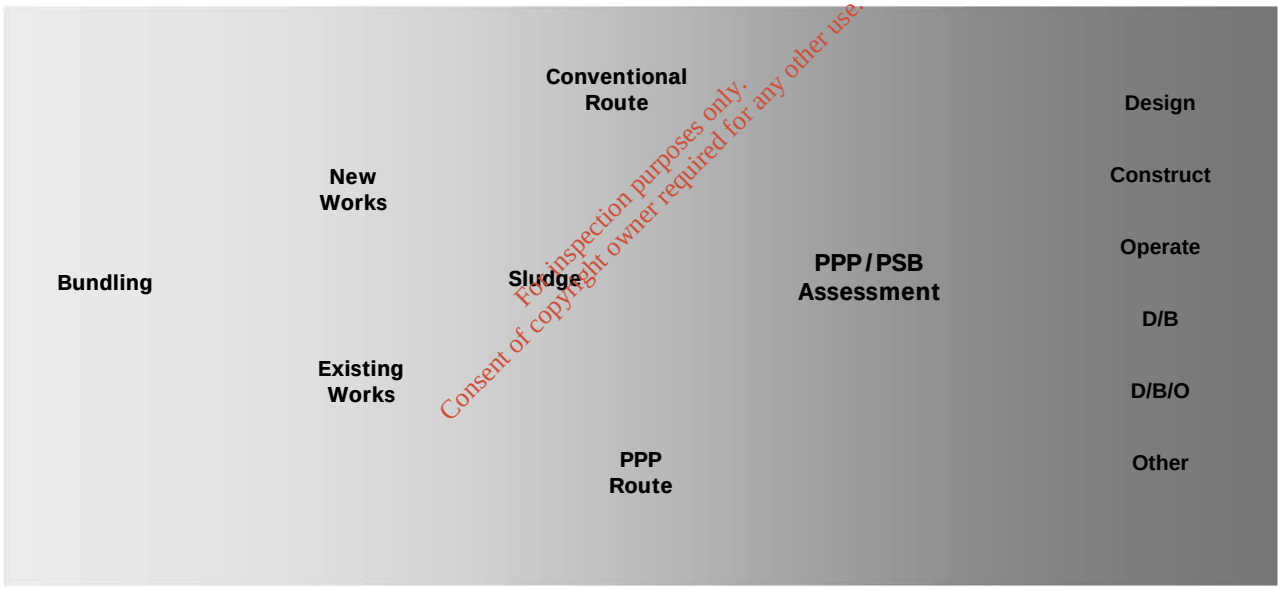
- the specific elements of the project to be progressed by means of:

a) Public Private Partnership Procurement Route
b) Conventional Procurement Route
c) Combination of PPP and Conventional Procurement Routes.

- the form of Public Private Partnership Route (if any) e.g. DB/DBO/DBOF.

- the allocation of risk proposed between the public and private sectors and who should have responsibility for securing the necessary statutory approvals.

- the Procurement Procedure to be used.



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In cases where the recommended solution includes a PPP Procurement Route, the PPP Assessment shall also undertake an initial market sounding to obtain the views of potential private sector contractors on the portfolio of projects that are proposed for procurement as PPP. The initial market sounding should consider the strength of the private sector market, the private sectors scope for achieving economies, and its relevant expertise. The PPP Assessment should assess and report on the likely level of interest in the market, the capability of the market to undertake the proposed range of projects and the long term stability of the market with respect to any proposed operational element.

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6.1.2 Project Bundling & Integration of Sludge Management

It is anticipated that the delivery of the proposed scale of investment in wastewater infrastructure in County Kerry will require the bundling of projects at the design, construction and operational stages to achieve the necessary economy of scale and to provide optimum efficiencies in the management, procurement and operational stages. It is anticipated that such a bundling solution will be prudent for any combination of Procurement Routes that may be recommended.

The Procurement Strategy shall identify and assess all available options and recommend the optimum strategy for appropriate bundling having regard to the technical and financial logistics and constraints at the various stages of the project i.e. design, procurement, construction, operation, funding etc.. In the preparation of the Procurement Strategy, an integrated proposal shall be prepared on sludge management that will entail a review of the 2003 County Sludge Management Plan to accommodate the full extent and technical nature of the proposed wastewater infrastructure and shall present recommendations and costings on appropriate sludge treatment technologies, transport, disposal and disposal outlets while taking into account appropriate regional Sludge Strategies.

The Procurement Strategy shall include a report on market soundings to indicate that the proposed bundling strategy is in line with market expectations in relation to the scale, nature, timescale and any other key component of the bundling solutions. The bundling solution shall be extended to and shall integrate with the Procurement Stage (i.e. Design, Construct and Operate stages) in the identification of the necessary resources and management skills that will be required by Kerry County Council and the DoEHLG in the financing and effective management of the projects.

6.1.3 Procurement Procedures

Appropriate Procurement Procedures shall be identified for the 3 stages of :

- design stages (i.e. detailed designs, contract documentation, specification and bill of quantities)
- construction stages
- operation stages

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The appropriate and optimum Procurement Procedure will be dependent on:

- Procurement Route that is recommended.
- PPP option recommended (if any).
- European Union and Irish procurement laws and/or regulations.
- specific characteristics of the project.
- potential to transfer statutory process risk.
- value for money that may be gained or lost as a result of the Procurement Procedure adopted.

The Procurement Strategy shall identify available options and present and recommend the optimum Procurement Procedure for the various elements and stages of the proposed project including recommendations on:

- Overall Timescale/Programme & Key Dates
- Advertising
- Pre-Qualification
- Tenders
- Tender Evaluation & Award Criteria
- Contract Award and remedies
- All other key procurement activities

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6.2 Management Strategy

Kerry County Council recognise that the implementation of the *County Kerry Wastewater & Sludge Project* will require additional technical, operational and administrative skills and expertise and will require a significant level of proactive management on the interface between the Council, specialist Consultants, Advisers, DoEHLG and the Contractors to ensure that the projects are delivered to the project timescales and budgets and in accordance with the requirements to be defined in the various Contracts and Output Specifications.

The project management experience gained by Kerry County Council in the conventional procurement of wastewater infrastructure projects covers procedures and organisation to take individual projects through the planning, design, procurement and construction stages before handing it over to Council operational staff to operate the service. In consideration of the scale of the infrastructure to be delivered and the likely range of Procurement Routes to be adopted, the *County Kerry Wastewater and Sludge Project* will require the introduction of new project management structures in Kerry County Council to achieve the desired outcome. In particular, Kerry County Council recognise that one of the key issues in relation to the contract and performance management of Public Private Partnership projects will be the need for effective structures and personnel within Kerry County Council to ensure that projects are managed effectively and that services are delivered to the required standard throughout the contract period.

The Management Strategy shall present options and recommendations on the 2 major management stages that are envisaged:

- **Development Stage**: dealing with the development of the projects up to and including contract award, generally along the lines of conventional project management but with additional expertise in the nature of Public Private Partnership where this forms part of the recommended solution.

- **Implementation Stage:** dealing with the procedures and organisation required (starting from the date of contract award) to oversee the construction, commissioning and operation of the asset for both conventional and PPP Procurement Routes.

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The Strategy for Delivery shall recognise that a significant degree of overlap will exist between Development Stage and Implementation Stage and the Management Strategy should be formulated to optimise skills and experience that will be established by providing for the evolution of Kerry County Council personnel from the Development Stage to the Implementation Stage.

The Strategy for Delivery shall present options and recommended solutions for staffing, skills, experience, expertise, advisors, roles and logistics of the Development and Implementation Management Teams while providing for the desired continuity of support structures between the stages. The Development and Implementation Management structures shall be identified for the appropriate mix of conventional and PPP Procurement Routes as may be identified in the Strategy for Delivery and should identify the change in focus that will be demanded in a PPP solution where the emphasis will be on quality assurance, spot checking and monitoring performance.

In formulation of the Management Strategy, the Consultant shall take into account the existing fundamental and extensive integration of water supply and wastewater management and operational structures in Kerry County Council and the need to maintain an efficient and viable management structure in water supplies. The Consultant shall also note the forthcoming *Water Supplies Strategic Study*, that will identify a parallel strategy for delivery for water supplies in County Kerry, and shall identify issues arising from the Strategy for Delivery that should be taken into consideration in the formulation of the *Water Supplies Strategic Study*.

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6.2 Management Strategy (continued)

The Management Strategy shall present the following:

- Assessment of the existing management, technical, administrative and operational staffing structure and reporting hierarchy that is currently in place in both the Operations and Capital Water Services Units of Kerry County Council. (Fig. 4. and Fig. 5)

- Options and recommended optimum structures for effective management, technical, administrative and operational staffing structures in the Water Services Capital Unit having regard to the skills required, the Procurement Routes and Programme for Delivery that is proposed and the nature and scale of the contracts to be delivered.

- Options and recommended optimum structures for effective management, technical, administrative and operational staffing structures in the Water Services Operations Unit having regard to the Procurement Routes and Programme for Delivery that is proposed and the nature and scale of the services to be delivered with particular reference to operational stage lifecycle in the case of both PPP and conventional Procurement Routes.

- All other management, technical, administrative and operational staff costs that may be required e.g. internal and external legal, financial, technical experts, staff from other sections of Kerry County Council, Process Auditor as required by Department of Finance, external stakeholders & regulators, etc.

- All appropriate office accommodation structures and locations, with particular recommendations for headquarter offices, sub-office and/or area-office floor space and locations of operational depots, stores etc. as may be required in the effective and efficient delivery of the services.

- Financial expenditure and income profile having regard to the phased development programme as proposed in the Strategy for Delivery. Cost estimates should include and identify all management, technical, administrative and operational staff, training costs, communications technologies, office costs, transport costs and all other costs that may be incurred in the delivery of the service in accordance with the recommendations of the Strategy for Delivery.

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The Management Strategy shall be formulated with reference to best practice in other similar organisations and Local Authorities and shall identify new operational and management structures and procedures that will be customer-driven rather than provider focused and that will facilitate:

- improved quality, performance and efficiency of the service.

- optimised management and operational structures with clear reporting, communications and decision-making arrangements.

- introduction of a performance culture by establishing measurable targets.

- elimination of unnecessary bureaucracy and excessive monitoring arrangements.

- ongoing performance review and benchmark assessment.

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6.3 Financial Strategy

The majority of funding for the capital element of infrastructure development works is currently met by Capital Grants through the DoEHLG from Exchequer or EU funds. Local Authorities are required to identify and secure funding to cover the balance of capital costs as well as the operational and maintenance costs.

The Financial Strategy will be required to formulate the financial methodology whereby the required infrastructure is financially viable and will be required to identify the sources of expenditure & income and a satisfactory expenditure/income balance throughout the planning, procurement, construction and operation phases of the various elements of the project.

The Financial Strategy will be required to identify and formulate the financial profiles for the following:

Expenditure

- Project Management - Design, Procurement & Construction Stages
- Land Acquisition & Wayleaves
- Design & Other Fees
- Planning, EIS etc.
- Construction Costs & Marginal Costs
- Project Management - Operation Stage
- Operational Costs & Service Performance Payments
- Indexation
- All other costs as may be identified.
- Capital & Operational Unit Costs (per head of population, per house and per hectare of serviced and serviceable land).

Income

- Grants – All Sources
- Private finance (as may be determined by PPP Strategy)
- Development Levies
- Special Infrastructural Levies
- User Charging
- Loans
- All other income sources as may be identified and may be appropriate

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The Financial Strategy shall be integrated with and shall inform the Programme for Delivery in the formulation of a financially and logically viable Strategy for Delivery. In the formulation of the financial options and in the selection of the optimum Financial Strategy the Consultant shall undertake particular liaison and shall reach full agreement on any proposed financial strategy with the following:

- DoEHLG.
- Kerry County Council – Director of Water Services.
- Kerry County Council - Head of Finance.
- Kerry County Council - Director of Planning.

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6.4 Statutory Process Strategy

Traditionally, Kerry County Council has borne the risks associated with undertaking the statutory process for major infrastructural projects which would typically include the following:

- EIS
- Wayleaves
- Land acquisition
- Compulsory Purchases
- Foreshore Licenses
- Discharge Licenses
- Planning Permissions & Part 8 Planning
- Waste Disposal Licenses

Public Private Partnerships may provide the opportunity for Kerry County Council to transfer some or all of statutory process risk to the private sector and one of the key decisions to be made during the course of preparation of the Procurement Strategy is whether there is scope for allocating some statutory risk to the private sector.

In a Public Private Partnership Project, two options are possible for delivery of statutory approvals:

Statutory process retained by the Kerry County Council:

The public sector carries out the planning and statutory processes in advance of the tender process. With this option, statutory process is completed with the benefit that there is certainty as regards the conditions to be applied to the project and timescale risk is managed by Kerry County Council. On the other hand, this certainty involves definition of project characteristics which tend to limit the flexibility afforded to tenderers in developing innovative solutions.

Transfer of statutory process risk to the Private Sector:

Tenders are invited for a project in advance of statutory process, with tenderers ultimately responsible for securing statutory approval if selected. In this scenario, a key issue is whether the Contractor has the capacity to manage statutory process risk effectively in order to deliver value for money. A key consideration in transferring statutory process risk will be whether the Contractor has the necessary flexibility to offer the most appropriate and cost effective solutions.

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The Strategy for Delivery shall undertake an assessment of the potential for transfer of statutory process risk to the private sector with a particular emphasis on achieving improvement in value for money and shall:

- Identify all statutory process activities and risks.
- Allocate statutory process activities and risks.
- Assess the impacts on the proposed allocations on project cost and timescale.
- Identify options for involving the private sector in statutory processes and select the preferred option.

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6.5 Stakeholder Strategy

Kerry County Council acknowledge the importance of giving appropriate consideration to the statutory rights and legitimate economic interests of stakeholders in any project.

In the event that the Strategy for Delivery includes a PPP involvement, it is proposed to adopt an approach involving extensive consultation and open communications with all stakeholders at the earliest opportunity, the key elements of which will ensure that:

- The maximum level of information possible is made available to the relevant stakeholders in an accessible form and within a properly understood and consistently applied framework.
- The relevant stakeholders are informed of the existence of a Public Private Partnership project as soon as it is proposed.
- Systems are put in place at a local level to ensure that stakeholders are kept informed of significant developments throughout the process.

It is anticipated that consultation will be undertaken with all interests and stakeholders such as:

- Employees
- Trade Unions or other Employee Representatives
- General Public
- Service Users and their Representatives/Associations/Lobby Groups
- Community Served
- Elected Public Representatives

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The Stakeholder Strategy shall:

- Identify all stakeholders
- Identify legal or other rights of stakeholders
- Identify impacts on stakeholders
- Propose mitigations for any impacts
- Prepare a Communications Plan setting out the processes and timetable by which key project stakeholders will be consulted.

While the primary aim of the above consultations will be the resolution of stakeholder issues, these consultations will also assist in identification of other issues that may need to be highlighted in any potential contract where such issues may impact on the construction and/or operation costs of the project. Such costs and implications should be fully integrated in the decision making process in the formulation of the overall Strategy for Delivery.

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6.6 Review of Documents/Reports and Proposals

In the preparation of the Technical Assessments, Development Boundary Maps and the Strategy for Delivery the successful Consultant will be required to assimilate requirements and proposals contained within a broad range of local, national and technical documents including:

Local Documents

- Kerry County Development Plan 2003 - 2009.
- Town Development Plans for Tralee, Killarney & Listowel
- Development Contribution Schemes as adopted in all Local Authorities in the County.
- Phosphorous Measures Report (Kerry County Council).
- Kerry County Sludge Management Plan.
- Other Studies, Reports and Recommendations relating to planning, wastewater infrastructure, environment, industry and employment in the County.

National and EU Documents

All current Acts, Regulations, Circulars and EU Legislation that may be relevant to:

- wastewater and sludge infrastructure, treatment systems and waste disposal.
- planning, heritage, archaeology, fisheries, foreshores, marine and environmental protection.
- Water Framework policies, pricing policies and polluter pays principles.
- Health & Safety.
- Procurement & Public Private Partnerships.
- Employment and Employee Rights, Industrial Relations
- All matters arising out of Common Law.

All current National Reports, Circulars, Advisory Notes that may be relevant to:

- wastewater and sludge infrastructure, pricing policies, polluter pays, Public Private Partnerships.

Technical Documents

All current design standards, relevant Irish and International Standards, DOEHLG circulars and Technical Papers related to:

- Wastewater treatment plant design.
- Sewer, overflow, pumping plant, etc. design.
- Sludge treatment, transport, reuse and disposal.

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6.7 Liaison & Consultations

In the preparation of the Technical Assessments, Development Boundary Maps and the Strategy for Delivery the successful Consultant will be required to liaise with the Contracting Authority Engineer and his representatives on all aspects of the project and will be required to consult with and seek approval where necessary of all other interested parties including:

- Kerry County Council, Tralee Town Council, Killarney Town Council and Listowel Town Council Planning Departments in relation to the future development of the County and Town Councils and in relation to the identification of identification and appropriate phasing of wastewater infrastructure in line with anticipated development.

- The Directors of Services for other Services of the Council (Fire Services, Housing, Community and Enterprise, Finance - including Head of Information Technology) and their representatives on all aspects of the project relevant to their particular Services

- EPA, An Taisce, Fisheries Boards, Nature Conservation Groups, Angling Clubs and all other interested bodies as may be required in the formulation of the Strategy for Delivery.

- Department of the Environment, Heritage and Local Government including National Parks & Wildlife Service with regard to the potential impact of any proposed works on Flora & Fauna and on National Heritage Areas and Special Areas of Conservation.

- Department of Communications, Marine and Natural Resources.

- The Office of Public Works.

- The Health Authority.

- Iarnród Eireann.

- The Local Government Computer Services Board

- All other Agencies, Consultants, Advisors, Local Authorities, Utilities Providers and Statutory Bodies where appropriate.

- Water Services staff at management, operational, maintenance levels in the identification of the status of existing assets and issues to be considered in the overall strategy.

- Staff, staff representatives and staff unions in relation to any proposed impacts on staff levels, duties, reporting arrangements and structures.

- DoEHLG, Department of Finance and Kerry County Council Head of Finance in relation to any research data and proposals and options to be presented in the formulation of the Financial Strategy.

Drafts and frameworks of all documents shall be presented for comment/discussion at formal discussion meetings during the course of preparation of the Technical Assessments, Development Boundary Maps and the Strategy for Delivery. Drafts of the final document shall be presented prior to completion and agreement of the Final Draft and preparation of the completed Report.

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6.8 Strategy for Delivery – Preparation & Submission

On appointment, the Consultant shall prepare and agree with Kerry County Council a detailed programme for the execution of the study and component activities. The programme shall include a list of staff assigned to the project. Specialist staff nominated shall be subject to the approval of Kerry County Council.

The Draft Strategy for Delivery shall be submitted to Kerry County Council within **6 months** from the date of the award of the contract.

The final Strategy for Delivery shall be completed and submitted within **1 month** after Kerry County Council returns its comments on the Draft Strategy.

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Chapter 7 – Procurement Process

7.1 Procurement Process

The appointment of an Economic Operator for a Public Service Contract (Wastewater) is defined by:

- **Classical Directive** – 2004/18/EC as amended by Commission Directive 2005/51/EC and Commission Regulation (EC) No 1564/2005.
- **National Procurement Rules** as set out in the "Green Book" and a number of listed Government Circulars.

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As the outcome of the current study is likely to include options involving DBO solutions, the tender procedures for the appointment of the Economic Operator will be undertaken in accordance with **Directive 2004/18/EC** in association with the National Procurement Rules (**Restricted Procedure)**.

.

Figure 13, overleaf, indicates the procurement flowchart in accordance with EU Directive, the key stages of which are:

a) Receipt of Requests to Participate
b) Issue of Contract Information Note
c) Receipt of Expressions of Interest
d) Pre-Qualification
e) Issue of Project Brief & Invitation to Submit Tender Proposals
f) Receipt of Tender Proposals
g) Tender Assessment & Interview
h) Contract Award

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Fig. 13 - EU Procurement Flowchart

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7.2 Contract Notice

The Contract Notice was published on the following media on **7th July 2006**:

- The Irish Government Public Sector Procurement Opportunities website (http://www.etenders.gov.ie)

The Contract Information Note was issued to all Applicants who submitted a Request to Participate. Economic Operators who submitted an Expression of Interest have been pre-qualified on the basis on information submitted.

7.3 Tender Proposals

Tender Proposals from shortlisted Candidates should not exceed 40 No. A4 pages, while supporting information may be annexed up to a maximum of 30 No. additional pages. **Six copies** of all submission material should be submitted.

Tender Proposals should present the following:

a) Summary details of Company Profile and/or Consortium or Joint Venture, if relevant.

b) Details of company management and relevant experience and experience of any proposed partner companies and/or sub-consultants or sub-contractors.

c) Outline Methodology for undertaking the project with particular reference to the information required under Paragraph 5.8.

d) Details of proposed Project Team, including CV's and current work loads, including demonstration of competence to act as Project Supervisor (Design Stage).

e) Details of specialist expertise required in the following areas:

(i) Strategic Development, Management & Operation of Public Utilities
(ii) Wastewater Infrastructure Planning & Design
(iii) Public Private Partnership, DBO etc.

f) Quality Control Procedures.

g) Outline Programme for delivery of services

h) Indicative Fee proposal and details of methodology to be used in fee calculation.

i) The consultants' assumptions of input from the Client.

j) Update of the personal, professional or other status of the Economic Operator as documented in the Expression of Interest.

Or

Confirmation that no variation has occurred to the personal, professional or other status of the Economic Operator as documented in the Expression of Interest.

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7.4 The Fee Proposal

The Fee Proposal shall be in the form of a lump sum fixed fee inclusive of V.A.T. and shall be detailed in the format indicated on Table 14:

Table 14 – Indicative Fixed Fee Proposal

Item	Indicative Fixed Fee
1. Strategy for Delivery Report	
2. Procurement Strategy (Including PPP & PSB Assessment)	
3. Management Strategy	
4. Financial Strategy (including Water Pricing Policy Report)	
5. Statutory Process Strategy	
6. Stakeholder Strategy	
7. Technical Assessments – Category A Settlements	
8. Technical Assessments – Category B Settlements	
9. Technical Assessments – Category C Settlements	
10. Technical Assessments – Category D Settlements	
11. Technical Assessments – Category E Settlements	
12. Technical Assessments – Category F Settlements	
13. Technical Assessments – Category G Settlements	
14. Strategic Environmental Assessment (SEA)	
15. Development Boundary Maps & Phasing – 90 Settlements	
16. PCS Support	
17. Monthly Client Meetings & Interim Reports	
Sub-Total	
18. Estimate of Subsistence & Travel Expenses	
19. Printing of all literature, draft and final reports, colour prints, drawings, etc.	
20. Supply of all documents, reports and drawings and in the approved digital formats.	
Sub-Total	
Add VAT	
Indicative Fixed Fee	

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It should be noted that Tender Proposals shall also:

a) provide a breakdown of the project team's input in person hours related to specific items 1-17 above.

b) provide a proposal with regard to stage payments to be made, if any.

c) include a statement of items not covered by the fixed fee proposal, if any, with a statement of the basis on which any such items are to be charged.

For the purpose of fees and expenses, all staff will be deemed to be based within Ireland and expenses shall be reimbursable only for expenses incurred within Ireland.

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7.5 Pre Award Interviews

Tenderers will be required to attend at interview to discuss and elaborate on the key elements of the Tender Proposal.

In relation to the interviews Tenderers should note:

- interviews will consist of a 15 minute presentation followed by a question & answer period for clarification of issues from both the client and consultant perspectives.
- only appropriate management or senior technical staff that will be directly involved in the project should attend at interviews.
- candidates should submit 4 copies of all proposed presentation material a minimum of 1 week in advance of the interview date.

7.6 Contract Award Criteria

The Contract Award shall be made to the Most Economically Advantageous Tender from the point of view of the Contracting Authority, based on the following Award Criteria:

Table 15 – Contract Award Criteria & Weightings

Award Criteria	Relative Weightings
Project management and organisational skills	100
Qualifications and relevant experience of the proposed project team to undertake the duties outlined in the Project Brief.	150
Ability to achieve cost effective solutions	175
Methodology and meeting clients' needs	125
Programme of works	100
Availability of resources and current workload	100
Quality Control Procedures	50
Fee Proposal	175
Methodology used in determination of the Fee Proposal	25
Total	**1,000**

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The Marks awarded for the Award Criteria shall be allocated following detailed assessment of Expressions of Interest, Tender Proposals and following Pre-Award Interviews with Tenderers.

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7.7 Shortlisting and Contract Award

The Contracting Authority has established a qualified Selection Board to:

- undertake an assessment of all Expressions of Interest.
- shortlist applicants based on submissions of Expression of Interest.
- undertake assessment of Tender Proposals and interviews with tendering candidates.
- prepare a Report on Tender Submissions and recommendation for contract award.

The Contracting Authority does not bind itself to accept the offer with the lowest Tender Price or any offer, and will not pay any compensation whatsoever in connection with either accepted or rejected proposals and tenders.

7.8 Communications

All correspondence in relation to the Contract shall be in the English or Irish language or be accompanied by an English or Irish translation. All communications and submissions shall be directed, in writing, to:

Administrative Officer,
Kerry County Council,
Water Services Capital Unit,
Maine Street,
Tralee, Co. Kerry,
Ireland.
Phone: 066-7162050
Fax: 066-7162051
Email: watercapital@kerrycoco.ie

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In the interest of equality of information, verbal communications cannot be entertained and replies will only be given to written communications. Such written replies will be given on the understanding that the full text of both the initial request and subsequent reply will be issued to all candidates. Replies to all individual communications will be issued as soon as possible following receipt.

To allow adequate time for processing, the latest date for receipt of queries from candidates in connection with the project is:

6th October 2006

All queries made and resulting replies will be circulated (by e-mail) to all Candidates, in confidence.

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7.9 Tender Proposals

Six copies of Tender Proposals and supporting documentation should be submitted in a sealed envelope.

Tender Proposals shall be addressed to:

Senior Executive Officer, Corporate Services,
Kerry County Council,
County Buildings,
Tralee,
Co. Kerry,
Ireland.

Language in which Tender Proposals to be drawn up:

English.

Tender Proposals shall be endorsed:

COUNTY KERRY WASTEWATER & SLUDGE PROJECT –STRATEGY FOR DELIVERY

Deadline for receipt of Tender Proposals:

4.00 p.m. on 20th October 2006.

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7.10 Opening of Tender Proposals & Late Submissions

The date and time of receipt of all submissions will be stamped on receipt. All submissions will be opened by authorised officers of the Contracting Authority as soon as possible after the relevant latest date for submission. Submissions received after the specified latest date & time cannot be included in further evaluation and will be returned to the candidate.

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Chapter 8 – General Brief Conditions

8.1 Terms of Appointment

The appointment shall be for the duration specified in the contract notices.

Where a group or consortium submits a proposal a lead consultant must be nominated who shall be fully responsible for providing the services required by this brief. All members of the group shall be jointly and severally liable to Kerry County Council for the completion of the contract.

This brief together with the letter of appointment and Manager's Order shall constitute a binding contract between the contracting authority and the consultant who is appointed.

The appointment shall be for the services described in this brief only and the Contracting Authority reserves the right to engage other consultants for additional services in connection with the Project if it so wishes.

All sums due to the Lead Consultant on foot of this appointment shall be paid within forty days of the submission of a correct invoice. All matters relating to fees and expenses shall only be transacted through the Lead Consultant.

8.2 Terms of Engagement

The fees for the Strategy for Delivery will be negotiated with the successful Consultant based on the Indicative Fee Proposal submitted and shall be a fixed fee.

If fee agreement cannot be reached, negotiations with that service provider will cease and not be re-opened. The agreed Fee Proposal will establish a Budget for the Scheme, which is subject to the approval of the Department of the Environment, Heritage and Local Government.

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8.3 Termination of Appointment

The Contracting Authority shall be entitled to terminate the appointment at any time without notice subject only to full payment being made for services performed up to the date of termination.

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8.4 Extension of Appointment

In the event that the Kerry County Council exercise its option to appoint the consultant to subsequent phases of the project, a detailed design brief will be prepared by Kerry County Council and issued to the Consultant. A fee proposal shall be submitted for the subsequent phase(s) in the form of a lump sum, insofar as possible, having regard to the nature of the service to be provided. The lump sum shall be apportioned to indicate the costs of the various elements of the appointment. An estimate of expenses likely to be incurred is also to be given as well as the basis for charging for services not included in the lump sum. The fee proposal should also give a breakdown of the Project Team's input in person hours for the services required and related to specific outputs. Only expenses that are necessarily incurred and fully justified will be recouped.

Kerry County Council is not obliged to extend the Consultants appointment to subsequent phases after the Strategy for Delivery, even if negotiations are entered into for these subsequent phases. Any extension of the Consulting Engineer's Appointment shall be subject to the prior approval of the Department of the Environment, Heritage and Local Government.

8.5 Project Meetings

The parties shall meet together with such frequency as may be deemed necessary by the Contracting Authority for the purposes of monitoring the progress of the Project. The successful candidate will also be required to attend and report progress at regular Steering Group Meetings between Kerry County Council and the DoEHLG.

The successful Candidate will be required to coordinate and present material at all consultation meetings and the costs of attendance and reporting should be included in the tender submission.

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8.6 Dispute Resolution

In the event of any dispute arising with regard to this service contract which the parties fail to settle, the dispute shall firstly be referred to Conciliation for resolution. Should a settlement not be reached at Conciliation, the dispute shall be referred to Arbitration. Arbitration shall in this instance mean the Arbitration Procedure, 1987, as published by the Institution of Engineers of Ireland or any amendment or modification thereof being in force at the time of the appointment of the Arbitrator. Should the parties fail to agree on an Arbitrator, the President for the time being of the Institute of Arbitrators shall be requested to nominate an Arbitrator.

8.7 Sub-Contracting

Except where otherwise provided by the Contract the successful Candidate shall not sub-contract any part of the Project without the prior consent of the Contracting Authority.

The successful Candidate shall be responsible for the acts, defaults and negligence of any Sub-Contractor, his agents, servants or workmen as fully as if they were the acts, defaults or negligence of the successful Candidate, his agents, servants or workmen.

8.8 Changes in Costs due to Statutory and Other Regulations

If the cost to the successful Candidate of performing his obligations under the Contract shall be increased or reduced by reason of the making after the date of the Tender of any law or of any order, regulation or bye-law, in so far as could have been reasonably unforeseen, having the force of law that shall affect the Candidate in the performance of his obligations under the Contract, the amount of such increase or reduction shall be added to or deducted from the Contract Price as the case may be.

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8.9 Ambiguity, Discrepancy, Error, Omission

The Candidate shall immediately notify the Contracting Authority of any ambiguity, discrepancy, error or omission in the contract documentation. The Contracting Authority shall, upon receipt of such notification, notify all Candidates of his ruling in respect of any such ambiguity, discrepancy, error or omission. Such ruling shall be issued in writing by the Contracting Authority and shall form part of the contract documents.

8.10 Conflict of Interest

Any conflict of interest or potential conflict of interest must be fully disclosed to the contracting authority in making the submission. Any registerable interest involving the Client's Representative and the Elected Members of the contracting authority, the Minister for the Environment and Local Government, Members of the Oireachtas or employees of the contracting authority or of the Department of the Environment and Local Government or their relatives must be fully disclosed in making the firm's submission or, in the event of this information only coming to the firms' notice after the submission of a proposal and prior to the award of the contract, should be communicated to the contracting authority immediately upon such information becoming known.

The terms 'registerable interest' and 'relative' shall be interpreted as per section 2 of the Ethics in Public Office Act, 1994.

8.11 Freedom of Information

Candidates should indicate the information which they consider to be commercially sensitive and which they wish to be kept confidential in any replies to Freedom of Information requests. Candidates should note that each FOI request will be considered individually and that the decision to release information rests with the Deciding Officer in the Contracting Authority and ultimately (under external review) with the Information Commission.

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8.12 Confidentiality

The Contracting Authority undertakes to use its best endeavours to hold confidential any information provided in the proposal submitted, subject to the Contracting Authority's obligations under law, including the Freedom of Information Act, 1997. If a candidate considers that any of the information submitted in the proposal should not be disclosed because of its sensitivity, this should be stated with the reasons for considering it sensitive. The Contracting Authority will then consult with the candidate in considering any request received under the Freedom of Information Act, 1997 before replying to such a request.

All candidates shall keep confidential any information obtained pursuant to this Contract from the Contracting Authority and shall not divulge same to any third party without the consent in writing of the Client. All candidates shall only divulge confidential information to those of the Candidate's employees as are directly involved or engaged for the purposes of the Contract and who need to know the same and will ensure that such employees are aware of and comply with these obligations as to confidentiality. All Candidates shall ensure that any of his sub-contractors or suppliers are bound by the requirements of this Clause.

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8.13 Publicity

Candidates should note that the Contracting Authority may make public the amount of all Indicative and Tender Prices and will publish the name of the successful Candidate. If a Candidate does not wish such details to be released, he should notify his objection and reasons with his Submission Proposal.

8.14 Value Added Tax

All prices and indicative prices quoted shall separately identify the amount of Value Added Tax applicable. In cases where the Candidate is not resident in the Republic of Ireland, he shall state the procedures and technicalities of VAT payments proposed to be adopted in the event that he is awarded the Contract.

8.15 Currency

All prices and indicative prices quoted and all other sums leading to and including the Fee Proposal shall be in Euro and shall be completed to two decimal places.

8.16 Tax Clearance Certificate

In the case of a Candidates resident in the Republic of Ireland it shall be a pre-condition of an award of contract that the Candidate, and all the proposed Sub-Consultants, shall within a stated period produce a current Tax Clearance Certificate or a Sub-Contractors C2 Certificate.

Non-resident Candidates, and their proposed Sub-Consultants will require a statement from the Revenue Commissioners of the Republic of Ireland that they are satisfied as to the suitability for tax purposes of the Candidate to be awarded a contract.

The Consultant and all sub-consultants (domestic or otherwise) shall continue to hold, in good standing, current issues of all such certificates for the duration of the term of employment and until final payment has been made.

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8.17 Pension, Sick Pay etc.

It will be a condition of the award of this Contract that the successful Candidate and all sub-contractors (domestic or otherwise) appointed by him will be required to provide evidence of membership of a Pension and Sick Pay Scheme to the satisfaction of the Contracting Authority prior to the signing of a Contract.

8.18 Withholding Tax

Under the Finance Act, 1987 withholding tax must be deducted from payments for professional services. This tax will be deducted from payments made to the firm awarded the contract and will be remitted to the Revenue Commissioners.

8.19 Ownership of Documents and Copyright

All documents prepared by the Client's Representative on foot of this appointment and submitted to the Contracting Authority will be considered the property of the Contracting Authority and may be used by the Contracting Authority at any time, including for other projects, without prior approval of the Client's Representative.

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8.20 Professional Indemnity Insurance

The firm to whom the contract is awarded must have professional indemnity insurance cover with a reputable insurance company to a value determined as adequate by Kerry County Council but in no way less than the minimum level of cover recommended by Department Circular IPPP1/04, issued on July 27th 2004. The minimum level of Professional Indemnity Insurance required in this case is **€6.35m**.

8.21 Other Insurances

The successful Candidate shall be liable for and shall indemnify the Contracting Authority against;

a) any liability, loss, claim or proceedings in respect of any injury or damage whatsoever to any property real or personal insofar as any such injury or damage arises out of or in the course of or by reason of the execution of the Contract and provided that any such injury or damage is due to any negligence omission or default of the Candidate, his servants or agents or any Sub-Contractor, his servants or agents – whether or not also partly due to the negligence omission or default of the Contracting Authority or of any person for whom the Contracting Authority is responsible.

b) any liability, loss, claim or proceedings whatsoever arising under any statute or at common law in respect of personal injury to or disease contracted by or the death of any person whomsoever arising out of or in the course of or caused by the execution of the Contract unless solely due to any act or neglect of the Contracting Authority or of any person for whom the Contracting Authority is responsible.

The firm to whom the contract is awarded must present evidence of Public Liability insurance cover to the value of ***€6.4m.*** and Employers Liability insurance of ***€12.6m.*** with a reputable insurance company.

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---------- END ----------

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APPENDIX A

Location Map

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Land Use	Units	Parking Space
Clinics, Surgeries	Per Staff member And per Consultancy room	1 4
Schools	Staff member Bus set down / 200 pupils Car set down/ 30 pupils	1 2 1
Offices	100 sq. m.	3
Shops, retail stores etc.	100 sq. m.	5
Banks and libraries	100 sq. m.	4
Hotels and guesthouses	Double bedroom or two single bedrooms	1
Bars, Lounges and Function Rooms (including hotel facilities)	10 sq. m. (public area)	2
Restaurants, Cafés (including hotel facilities)	10 sq. m. (dining area)	2
Church, cinema, theatre	3 seats	2
Dance Hall, Private Dance Club	10 sq. m. (dance floor and sitting space)	1
Manufacturing Industry	100 sq. m.	3
Warehousing	100 sq. m.	2
Golf, Pitch and Putt	Hole And per staff member	3 1
Sports Ground / Club	Per pitch	25
Funeral Homes		60
Nursing Homes	Per Bed space	1
Childcare facilities	Per 4 children And Per staff member	1 1
Playgrounds	Per 40 m2	1

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TABLE 3: RECOMMENDED WASTEWATER LOADING RATES FROM COMMERCIAL PREMISES

Situation	Source	Flow litres/day per person	BOD_5 grams/day per person
Industrial	Office and/or factory without canteen	30	20
	Office and/or factory with canteen	60	30
	Open industrial site e.g. quarry (excluding canteen)	40	25
Schools	Non-residential with cooking on-site	60	30
	Non-residential with no canteen	40	20
	Boarding school:		
	(I) residents	180	60
	(II) day staff (includes mid-day meal)	60	30
Hotels	Guests	250	75
	Guests (no meals)	180	45
	Resident staff	180	60
	Day staff	60	30
	Conference	40	20
	Restaurant full meals:		
	(I) luxury catering	25	25
	(II) prepared catering	15	15
	(III) snack bars	10	10
	(IV) function rooms incl. Buffets	10	10
	(V) fast food	10	10
Pubs and clubs	Residents	200	60
	Day staff	60	30
	Bar drinkers	10	10
	Bar meals	10	10
Amenity sites	Restaurants	15	15
	Function rooms	10	10
	Toilet blocks (per use)	5	10
	Toilet Blocks (long stay car parks)	10	15
	Golf clubs	20	10
	Squash, with club house	25	15
	Swimming	10	10
	Football Club	30	20
	Caravan Sites		
	(I) Touring	50	35
	(II) Static not serviced	75	35
	(III) Static fully serviced	150	55
	(IV) Tent sites	50	35
Hospitals	Residential elderly people	250	60
	Residential elderly people plus nursing	300	65
	Nursing homes (convalescent)	350	75

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