WHITEGATE- AGHADA AGGLOMERATION

WASTE WATER DISCHARGE LICENCE REVIEW APPLICATION

IRISH WATER

NOVEMBER 2021

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Environmental Licensing Programme
Office of Environmental Sustainability
Environmental Protection Agency
PO Box 3000
Johnstown Castle Estate
Wexford

01/11/2021

Re.: **Whitegate-Aghada WWDL (D0423-01)- Review Application**

Dear Inspector,

Please find attached the Waste Water Discharge Licence Review application for the Whitegate-Aghada Agglomeration in accordance with the Waste Water Discharge Authorisation Regulations, 2007 (S.I. No. 684 of 2007), as amended.

A fee of €20,000 will be receipted and made electronically by 5th of November 2021.

I trust the above is satisfactory.

Yours sincerely,

Marie Feehan

Marie Feehan

Environmental Strategy

This is a draft document and is subject to revision.

Waste Water Discharge Licence Application Form

EPA Ref. Nº: *(Office use only)*	

Environmental Protection Agency
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Tracking Amendments to Draft Application Form

Version No.	Date	Amendment since previous version	Reason
V. 2.0	05/10/2017	N/A	

Environmental Protection Agency

Application for a Waste Water Discharge Licence under the Waste Water Discharge (Authorisation) Regulations 2007 as amended.

CONTENTS

ABOUT THIS APPLICATION FORM

This form is for the purpose of making an application for a Waste Water Discharge Licence under the Waste Water Discharge (Authorisation) Regulations 2007 as amended, or for the review of an existing Waste Water Discharge licence.

The Application Form **must** be completed in accordance with the instructions and guidance provided in the *Waste Water Discharge Licensing Application Guidance Note.* The Guidance Note gives an overview of Waste Water Licensing, outlines the licence 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 http://www.epa.ie/pubs/forms/lic/wwda/.

A valid application for a Waste Water Discharge Licence must contain the information prescribed in the Waste Water Discharge (Authorisation) Regulations 2007 as amended. Regulation 16 of the Regulations sets out the statutory requirements for information to accompany a licence application. This 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 in respect of Regulation 16 requirements, please complete the Regulation 16 Checklist provided in Annex 2.

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 as amended. While every effort has been made to ensure the accuracy of the material contained in this 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.

PROCEDURES

The procedure for making and processing of applications for waste water discharge licences, and for the processing of reviews of such licences, appear in the Waste Water Discharge (Authorisation) Regulations 2007 as amended, and is summarised below. The application fees that shall accompany an application are listed in the Third Schedule to the Regulations.

Prior to submitting an application the applicant must publish (within the two weeks prior to date of application) in a newspaper circulating in the area, and erect at the point nearest to the waste water treatment plant concerned or, if no such plant exists, at a location nearest the primary discharge point, a notice of intention to apply.

An application for a licence must be submitted using this application form 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.

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. <u>The abbreviation "N/A" should not be used</u>.

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 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 licence is an offence under the Waste Water Discharge (Authorisation) Regulations 2007 as amended.

The provision of information in an application for a waste water discharge licence which is false or misleading is an offence under Regulation 35 of

the Waste Water Discharge (Authorisation) Regulations 2007 as amended.

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.

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.

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,
- type of discharge, i.e., continuous, tidal, intermittent,
- the hours during which the waste water works is supervised or manned and days per week of this supervision,
- in the event that this is a review application, state the grounds for which this review application is being made.

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

1. Introduction

The settlements of Rostellan, Aghada and Whitegate are located along the east coast of Cork Harbour and are accessed by the R630. The agglomeration has been identified by the EPA as a Priority Area where untreated wastewater is currently being discharged into the environment.

The objective of the Whitegate Sewerage Scheme project is to provide new pumping stations (PS) (3 no.), gravity sewers, rising mains and a wastewater treatment plant (WwTP) capable of providing appropriate preliminary and primary wastewater treatment for the agglomeration. The proposed infrastructure consisting of primary settlement tanks , stormwater holding tank and the MEICA (Mechanical, Electrical, Instrumentation Control and Automation) has been designed to cater for the projected load at the 10-year design horizon (2,479 PE), but shall be capable of being extended in the future to accommodate for 30-year horizon flows. The proposed civil and structural components have been designed to cater for future expansion up to the projected load at the 30- year design horizon (3,700 PE).

Presently, the agglomeration has a number of independent collection systems which collect wastewater within and around the villages. There are 2 no. private package plants located within the agglomeration- Lower Aghada package plant (discharging to Cork Harbour) and Radharc na Mara (Rostellan) (discharging to sewer). There is one septic tank serving the Ardnabourkey

housing estate which discharges groundwater via a percolation area. The existing infrastructure is not capable of meeting the requirements of the Urban Waste Water Treatment Directive (91/ 271/ EEC) (UWWTD).

Once operational, the proposed Whitegate-Aghada Sewerage scheme will provide an effective wastewater collection network, treatment capacity and treated effluent outfall for current and future agglomeration loads- thus eliminating the discharge of untreated wastewater. The proposed scheme will improve water quality in Cork Harbour and bring benefits associated with health, amenity, environmental quality as well as facilitating economic and social development for the villages of Whitegate and Aghada, which have been constrained by the lack of adequate wastewater treatment capacity.

Once operational, the Whitegate-Aghada WwTP will eliminate the discharge of untreated wastewater from sewer networks to Cork Harbour, thereby having a significantly positive impact on water quality, aligning with objectives set out in the Water Framework Directive (2000/ 60/ EC) and the European Communities Environmental Objectives (Surface Water) Regulations, SI272 of 2009, as amended (surface Water Regulations).

A planning application has been submitted to Cork County Council for the proposed Whitegate-Aghada Sewerage scheme (reference no. 20/06463). Planning permission was granted on the 30/08/2021.

2. The wastewater works and the activities carried out therein

Whitegate-Aghada Sewerage Scheme Overview

The proposed Whitegate-Aghada Sewerage Scheme will provide a new wastewater treatment plant WwTP, marine outfall, 3 no. proposed wastewater pumping stations, approximately 3.84km of proposed rising mains, 1.4km of proposed gravity sewers and 0.15km of gravity sewers upgrades and associated ancillary infrastructure.

Proposed Wastewater Treatment

The proposed Whitegate-Aghada WwTP will provide preliminary and primary treatment infrastructure designed to cater for hydraulic and biological loadings up to an ultimate population equivalent (PE) of 2,479 (10-year design horizon), treating effluent to discharge standards of 20% reduction cBOD (mg/l) and 50% reduction Suspended Solids (mg/l).

The WwTP will consist of an inlet works, stormwater storage tank, primary treatment, sludge thickening and site control facilities.

Primary Discharge

The proposed primary discharge, identified as SW001, will discharge treated effluent from the proposed WwTP by gravity to Outer Cork Harbour via a 295m (from high-water mark) long marine outfall.

The proposed primary discharge will replace the existing primary discharge SW01WGAG, which discharges at Long Point in the vicinity of the ESB station. SW01WGAG will be decommissioned under the proposed Sewerage Scheme.

Secondary Discharges and Stormwater Overflows

The septic tank serving the Ardnabourkey estate (GW004) will be decommissioned and a gravity sewer will be constructed to convey flows from the housing estate to the proposed WwTP, via a proposed pumping station at Whitegate.

2 no. existing secondary discharges SW02WGAG and SW03WGAG are to be retained and reused as surface water overflows / emergency overflows at sites of proposed pumping stations. The existing package plant at SW03WGAG will be decommissioned.

The existing Surface Water Overflow (SW005) associated with the existing pumping station adjacent to Whitegate Square will be retained and utilised as a surface water overflow / emergency overflow for the proposed Whitegate pumping station. The existing pumping station will also be decommissioned.

3. **The sources of emissions form the wastewater works**
4. **waste water works into the receiving aqueous environment as well as identification of significant effects of the emissions on the environment**

The proposed infrastructure consisting of primary settlement tanks , stormwater holding tank and the MEICA (Mechanical, Electrical, Instrumentation Control and Automation) has been designed to cater for the projected load at the 10-year design horizon (2,499 PE), but shall be capable of being extended in the future to accommodate for 30-year horizon flows. The proposed civil and structural components have been designed to cater for future expansion up to the projected load at the 30- year design horizon (3,700 PE).

Primary treatment of wastewater will be provided, with treatment effluent quality achieving 20% reduction cBOD (mg/l) and 50% reduction Suspended Solids (mg/l). Average daily flows of 697.5m^3/day (10-year) are expected at the WwTP. Further detail on estimated quantities of emissions are provided in **Section B.4**.

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

The proposed WwTP will be designed by the appointed Contractor to ensure the primary discharge of treated effluent achieves 20% reduction in cBOD (mg/l) and 50% reduction in Suspended Solids (mg/l). The proposed WwTP will provide primary treatment prior to discharging effluent to Outer Cork Harbour. This level of treatment is appropriate to ensure compliance with the Urban Waste Water Treatment Directive.

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

Standard Operating Procedures, Environmental Plans and Site Emergency Plans will be developed by the Contractor prior to the WwTP becoming operational.

7. **Measures planned to monitor emissions into the environment**

The primary discharge monitoring will be carried out in accordance with the licence requirements.

8. Types of discharge, i.e., continuous, tidal, intermittent

Outfall	Type	Details	Type of Discharge
New			
SW001	Proposed Primary Discharge	Treated effluent and stormwater overflow.	Continuous
Retained			
SW005	Existing SWO – to be retained	Existing SWO associated with the existing Whitegate pumping station, to be retained for use as an SWO/EO for the proposed Whitegate pumping station.	Intermittent
Reused			
SW002	Existing secondary- proposed SWO	Sewage network discharge without treatment- existing outfall to be reused as an SWO/EO for the proposed Rostellan PS.	Intermittent
SW003	Existing secondary- proposed SWO	Secondary network discharge with some treatment via private wastewater package plant ultimately discharging to Cork Harbour- outfall to be reused as an SWO/EO for the proposed Lower Aghada PS. The package plant will be decommissioned.	Intermittent
To be Decommissioned			
SW001	Existing primary discharge	Discharge at Long Point- to be decommissioned.	Continuous
GW004	Existing- secondary	Existing septic tank discharge to groundwater.	Continuous

9. The hours during which the waste water works is supervised or manned and days per week of this supervision

At a minimum: 8 hours per day (Monday to Friday) with out of hours cover.

10. In the event that this is a review application, state the grounds for which this review application is being made

This licence application is intended to replace the existing Wastewater Discharge Licence for the agglomeration (reference D0423-01). The Licence review is being submitted to account for the relocation of the Primary Discharge, increased loading and proposed new emission limit values.

As well as serving the current needs of the agglomeration, the proposed development has been designed to cater for future growth and development within the agglomeration. The proposed infrastructure consisting of primary

settlement tanks , stormwater holding tank and the MEICA (Mechanical, Electrical, Instrumentation Control and Automation) has been designed to cater for the projected load at the 10-year design horizon (2,479 PE), but shall be capable of being extended in the future to accommodate for 30-year horizon flows. The proposed civil and structural components have been designed to cater for future expansion up to the projected load at the 30- year design horizon (3,700 PE).

SECTION B: GENERAL

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

B.1 Application Type

Is this a review application?	Yes	No
	X	

If yes, provide the following information:

EPA Licence Register Number	D0423-01

State the grounds for which this review application is being made:

This updated licence application is intended to replace the existing Wastewater Discharge Licence for the agglomeration (reference D0423-01). The Licence review is being submitted to account for the relocation of the Primary Discharge point, increased loading and proposed emission limit values.

The Agency issued a waste water discharge licence for Whitegate-Aghada waste water treatment plant (WWTP) (Authorisation reference D0423-01). Schedule C of the licence requires the provision of a secondary WWTP and the discontinuation of the Secondary Discharge.

Irish Water now requests authorisation

- to relocate the primary outfall which is a different location to that authorised in the licence
- Provision of Primary WWTP rather than Secondary Treatment
- Proposed new emission limit values
- Decommissioning of the Secondary discharge

As well as serving the agglomerations current needs, the proposed development has been designed with the capability of being extended to cater for future growth and development within the agglomeration.

B.2 Agglomeration Details

Name of Agglomeration	Whitegate- Aghada

Provide a drawing detailing the agglomeration to which the licence application relates. It should have the boundary of the agglomeration to which the licence application relates clearly marked in a continuous red line. Please note that the agglomeration boundary shall include all areas serviced by the sewer network and shall include the wastewater treatment plant. All areas of the agglomeration shall be within the agglomeration boundary. The boundary line on the map should not be impinged on by labels or any other graphic insertions.

Attachment B.1 *should contain appropriately scaled hardcopy drawings / maps (≤A3) of the agglomeration served by the waste water works showing the boundary clearly marked in red ink. This drawing / map 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 geo-referenced digital drawing should be provided to the Agency at the following address: gis@edenireland.ie.*

Please see Agglomeration Plan **Drawing No. 01 IW-10015229-03-02-001** located in **Attachment B.2**.

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.

Name*:	Irish Water
Address:	Colvill House
	24-26 Talbot Street,
	Dublin 1.
	D01 NP96
CRO Number:	530363
Tel:	01 8925000
e-mail:	WasteWaterLicensingSouthern@water.ie

**This should be the name of the water services authority in whose ownership or control the waste water works is vested.*

Name*:	Ken Conroy
Address:	Colvill House
	24-26 Talbot Street
	Dublin 1
	D01 NP86
Tel:	01 8925000
e-mail:	WasteWaterLicensingSouthern@water.ie

**This should be the name of person nominated by the water services authority for the purposes of the application.*

B.3 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*:	Regional Wastewater Compliance Specialist
Address:	Ballytigen TD, Whitegate, Co. Cork (proposed address)
Grid ref (6E, 6N)	183256E, 62435N
Level of Treatment	Primary
Telephone Number:	N/A
e-mail:	WasteWaterComplianceSouthern@Water.ie

***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 hardcopy drawings / maps (≤A3) of the site boundary and overall site plan, including labelled discharge, monitoring and sampling points.*

Please see proposed WwTP site plan layout **Drawing No. 2 IW-10015229-03-02-002** located in **Attachment B.3**.

B.4 Description of Associated Waste Water Treatment Plant(s)

Provide a description of the waste water treatment plant(s), type of process units, level of treatment provided and design capacity (p.e. and flow rates) for the areas of the waste water works where discharges occur.

Proposed Wastewater Treatment Plant
The proposed infrastructure consisting of primary settlement tanks , stormwater holding tank and the MEICA (Mechanical, Electrical, Instrumentation Control and Automation) has been designed to cater for the projected load at the 10-year design horizon (2,479 PE), but shall be capable of being extended in the future to accommodate for 30-year horizon flows. The proposed civil and structural components have been designed to cater for future expansion up to the projected load at the 30- year design horizon (3,700 PE).

Primary treatment of wastewater will be provided, with treatment effluent quality achieving 20% reduction cBOD (mg/l) and 50% reduction Suspended Solids (mg/l).

The proposed WwTP will include the following infrastructure:

- Inlet flow attenuation chamber with overflow;
- Self-contained inlet micro strainer 6mm screen c/w integral hand raked bypass;
- Piped bypass manual raked bar screen 19mm;
- Overflow chamber (FA-FFT) c/w return pumps;
- Stormwater holding tank (216m^3 – 10yr design horizon) c/w return pumps;
- Flow measurement flume (FFT);
- Flow split chamber;
- 3 no. primary settlement tanks (PST), with footprint provision for a fourth PST;
- PST de-sludge/ de-scum chamber to primary sludge pumping station;
- Picket fence thickener with supernatant decant tree;
- Supernatant liquors pumping station;
- Collection manhole post PST;
- Sample chamber c/w final effluent wash water pumps;
- Potable/ final effluent wash water kiosk c/w break tank and poster pumps.
- MCC and welfare kiosk.

Site location plan and scheme layout plans are presented in **Drawing No. 3 IW-10015226-03-02-003** and **Drawing No. 4 IW-10015226-03-02-003A** located in **Attachment B.4.**

The estimated Dry Weather Flow (DWF) for the 10-year design horizon is **558m3/day.**

The estimated Average Daily Flow (ADF) for the 10-year design horizon is **697.5m3/day**

Effluent from the proposed WwTP is to achieve the following Emission Limit Values (ELVs):

- **cBOD (mg/l):** 20% reduction;
- **Suspended Solids:** 50% reduction.

Key process elements at the proposed WwTP are described below:

Inlet Works (Preliminary Treatment)
Preliminary treatment of flows up to Formula A will be provided by a single set of duty inlet screens. Inlet screens shall incorporate a micro-strainer type screen with aperture at 6 mm, contained in a prefabricated box complete with coarse bar bypass screen and screenings bin. Package inlet works are acceptable in accordance with Irish Water Specification IW-TEC-700-99-02. The inlet works will incorporate a manual bypass which will be fitted with a 19mm manual rake bar screen. Screenings shall be discharged into the skip/ wheelie bin prior to removal from site. Grit removal will also be provided.

Following preliminary treatment, flows will pass to a rectangular weir chamber which will enable Full Flow to Treatment (FFT) to pass forward for primary treatment, with flow in excess of FFT being diverted to the proposed stormwater storage tank.

Stormwater Management
The stormwater storage tank has been sized to store flow in excess of FFT discharged via the FA-FFT flow split chamber for the 10-year design horizon. The open reinforced concrete structure will incorporate return duty/ standby pumps, hydro ejector type mixer and screened overflow in the event flows exceed Formula A. Pumped flows are returned to the FA-FFT flow split chamber during periods of low flow at the inlet works.

The structure shall be capable of being extended in the future to accommodate spills up to the 30-year design horizon.

Primary Settlement Tanks
The proposed Primary Settlement Tanks (PSTs) have been designed to initially cater for the 10 year design horizon but can be expanded to cater for the future 30-year design horizon. Screened flows up to FFT shall be split upstream of the PSTs by means of a splitter chamber to create three equal process streams which will feed three independent primary settlement tanks. The settlement tanks shall utilise the 'upward flow' type settlement process and shall be a prefabricated proprietary unit.

Sludge Management
The sludge management shall receive sludges from the primary settlement tanks and shall consist of a sludge pumping station, Picket Fence Thickener (PFT), and supernatant return pumping station.

Sludges from the PSTs will flow by gravity to the sludge pumping station, via which they will be pumped to the PFT. Supernatant shall be taken from the PFT and recirculated to the flow split chamber prior to the PST via the supernatant return pump station.
Thickened solids shall be collected via tanker and transported to the off-site collection facility.

The sludge management system is sized for the 10-year design horizon with the capability of being expanded to cater for the future 30-year design horizon.

Proposed Marine Outfall
The proposed 295m marine outfall (from the high-water mark) will be designed to have sufficient capacity to cater for future loading up to the 30-year design horizon and will be capable of discharging Formula A flows of 5,673m^3/day. Effluent will discharge by gravity at an approximate level of -5.3mOD (Malin), terminating at an 80mm diameter diffuser port.

B.5 (i) 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.

Actual Population Equivalent	2,238 PE (based on 2011 census data)
Design Population Equivalent	**10 Year:** 2479
Data Compiled (Year)	2016
Method of Compilation, e.g., direct measure	Review of registered properties on GeoDirectory, 2011 Census results

Section 4.2.12 of the of the East Cork Municipal District Local Area Plan (LAP), 2017 confirmed the existing number of houses in Q1 of 2015 as 893 based on Geodirectory information. The Development Boundary Objective DB-01 for Whitegate & Aghada states "*it is an objective to encourage the development of up to 190 houses during the plan period*".

There is no specific population estimates for the villages of Whitegate and Aghada presented in the LAP.

B.5 (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 water habitat.

No significant developments identified where planning permission has been granted but development has not been completed.

B.5 (iii) Fees

State the relevant class of waste water discharge as per Column 1 of the Second Schedule, and the appropriate fee as per Columns 2 or 3 of the Third Schedule of the Waste Water Discharges (Authorisation) Regulations 2007 as amended.

Class of waste water discharge	Fee (in €)
Discharges from agglomerations with a population equivalent of: 2,001 – 10,000 PE (Licence Review)	€20,000

B.6 Primary Discharge Point

Provide information on the primary discharge point, as defined in the Waste Water Discharge (Authorisation) Regulations as amended, associated with the waste water works.

New Primary Discharge Point to be Constructed

Type of Discharge	E.g. Diffuser, Lunar Valve, Non-return flap valve etc. Diffuser (3 No. 100mm diameter ports)
Unique Point Code	SW001
Location	Ballytigeen TD
Grid ref (6E, 6N)	E: 182518, N:061575
Source of Emission	WwTP effluent
Monitoring Point Location (6E, 6N)	Final Effluent Chamber (E: 183205, N: 062420)
Monitoring Frequency	As required
Composite Sampler Provided	Yes
Receiving Water Name	Outer Cork Harbour
Receiving Water Type	Coastal
Receiving Water WFD Code	IE_SW_050_0000

Existing Primary Discharge Point to be Decommissioned

Type of Discharge	E.g. Diffuser, Lunar Valve, Non-return flap valve etc. Pipe to Cork Harbour
Unique Point Code	SW001
Location	Cork Harbour (Long Point in the vicinity of the ESB station)
Grid ref (6E, 6N)	E:183337, N:064664
Source of Emission	Sewer network
Monitoring Point Location (6E, 6N)	Sampling point E: 184029, N: 063851
Receiving Water Name	Cork Harbour
Receiving Water Type	Coastal
Receiving Water WFD Code	IE_SW_060_0000

Attachment B.3 *should contain appropriately scaled hardcopy drawings / maps (≤A3) of the primary discharge point, including labelled monitoring and sampling points associated with the discharge point.*

Please see primary discharge point **Drawing No. 5 IW-1001522-03-02-004** in **Attachment B.6**.

B.7 Secondary Discharge Point(s)

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

Existing Secondary Discharge Point to be Decommissioned

Type of Discharge	E.g. Diffuser, Lunar Valve, Non-return flap valve etc. Percolation area
Unique Point Code	GW004
Location	Ardnabourkey
Grid ref (6E, 6N)	E:184543, N:063066
Source of Emission	Septic tank discharge
Receiving Water Name	Whitegate
Receiving Water Type	Groundwater
Receiving Water WFD Code	IE_SW_G_079

Attachment B.4 *should contain appropriately scaled hardcopy drawings / maps (≤A3) of the secondary discharge point(s), including labelled monitoring and sampling points associated with the discharge point(s).*

There are no proposed secondary discharges as part of the proposed Whitegate-Aghada Sewerage Scheme. The location of the existing secondary discharge SW04WGAG to be decommissioned is presented in **drawing No. 6 IW-10015226-03-02-005** in **Attachment B.7**.

B.8 Storm Water Overflow Point(s)

Provide information on **all** storm water overflow point(s) associated with the waste water works.

Existing SWO to be Retained

Unique Point Code	SW005 Whitegate PS Dual Function
Discharge Location (6E, 6N)	E: 184024, N:063840
Does this Storm Water Overflow comply with the criteria as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995	Yes
Is this Storm Water Overflow to be decommissioned?	No. This is an existing SWO associated with the existing pumping station adjacent to Whitegate Square. The pumping station will be decommissioned as part of this Whitegate-Aghada Sewerage Scheme. The existing SW005 will be retained to serve as an overflow for the proposed Whitegate pumping station
Decommissioning Date	N/A

Existing Secondary Discharge Point(s) to be Retained for use as Stormwater Overflows

Unique Point Code	SW002 Rostellan PS Dual Function
Storm Water Device Location (6E, 6N)	E:186888, N:65808 (proposed)
Discharge Location (6E, 6N)	E:186875, N:065819
Does this Storm Water Overflow comply with the criteria as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995	Yes
Is this Storm Water Overflow to be decommissioned?	No. The existing outfall pipe is to be retained and used as an SWO for the proposed Rostellan pumping station.
Decommissioning Date	N/A

Unique Point Code	SW003 Lower Aghada PS Dual Function
Storm Water Device Location (6E, 6N)	E:185537, N:65693 (proposed)
Discharge Location (6E, 6N)	E:185465, N:065780
Does this Storm Water Overflow comply with the criteria as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995	Yes
Is this Storm Water Overflow to be decommissioned?	No. The existing outfall pipe is to be retained and used as an SWO for a proposed pumping Lower Aghada pumping station.
Decommissioning Date	N/A

Attachment B.5 *should contain appropriately scaled hardcopy 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).*

Please see Stormwater Overflow **Drawings No. 7 IW-10015226-03-02-006** and **Drawing No. 8 IW-10015226-03-02-006A** in **Attachment B.8**

B.9 Emergency Overflow Point(s)

Provide information on **all** emergency overflow point(s) associated with the waste water works.

Unique Point Code	N/A
Emergency Overflow Device Location (6E, 6N)	N/A
Discharge Location (6E, 6N)	N/A

Attachment B.6 *should contain appropriately scaled hardcopy drawings / maps (≤A3) of emergency overflow point(s) associated with the waste water works, including labelled monitoring and sampling points associated with the discharge point(s).*

As per above SWO Drawings- SW002, SW003 & SW005 are dual function SWO/EO's.

B.10 Leachate

Leachate Accepted at the plant	**Yes**	**No**
		X
Quantity of Leachate accepted (m^3/annum)	N/A	

B.11 Industrial, Commercial and Trade Inputs

Applicants should provide details of any significant industrial inputs into the waste water treatment works.

Industrial Inputs	**Type**	**Quantity (m3/annum)**
N/A	N/A	N/A

B.12 Abstractions

Applicants should submit the following information for each abstraction point (including drinking water) which potentially impacts on, or is potentially impacted by the waste water treatment works. 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.

Abstraction Code	Abstraction Volume (m^3/day)	Distance upstream/downstream	Easting (6E-digit GPS Irish National Grid Reference)	Northing (6E-digit GPS Irish National Grid Reference)
N/A	N/A	N/A	N/A	N/A

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

Attachment B.7 *should contain any supporting information.*

B.13 Planning Authority and/or Public 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:	Cork County Council
Address:	County Hall,
	Carrigrohane Road,
	Cork
	T12 R2NC

Tel:	(021) 4276891
e-mail:	planninginfo@corkcoco.ie

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

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

Local Authority Planning File Reference Nº:	206463

Attachment B.8a *should contain* ***the most recent*** *planning permission, including a copy of* ***all*** *conditions, a copy of the planning inspector's report and where an EIAR was required, copies of any such EIAR and any certification associated with the EIAR, should also be enclosed. Where planning permission is not required for the development, provide reasons, relevant correspondence, etc.*

Planning permission and conditions for planning file reference number 206463 can be found in **Attachment B.13 (i)**

The corresponding planning inspectors report for planning file reference number 206463 can be found in **Attachment B.13 (ii)**

An EIA Screening report was prepared and submitted as part of the planning application. The report concludes:
"Based on the information provided in this report, it is the opinion of Arup that there is no real likelihood of significant effects on the environment arising from the proposed development and that an EIA is not required.
Cork County Council, as the competent authority, will make the EIA screening determination".

A copy of the EIA Screening report is provided in **Attachment B.13 (iii)**

B.14 Notices and Advertisements

Regulations 10 and 11 of the Waste Water Discharge (Authorisation) Regulations 2007 as amended, require all applicants to advertise the application in a newspaper (within two weeks prior to date of application) and by way of a site notice. See *Guidance Note.*

Attachment B.9 *should contain a copy of the site notice and an appropriately scaled drawing (≤A3) showing its location.* ***The original application must include the original page of the newspaper in which the advertisement was placed****. The relevant page of the newspaper containing the advertisement should be included with the original and one (1) copy of the application.*

A copy of the public notice, scaled drawing indicating its location and newspaper notice advertisement are provided in **Attachment B.14 (i), (ii) & (iii)**

B.15 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 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.10 *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.*

The Agency issued a waste water discharge licence for Whitegate-Aghada waste water treatment plant (WWTP) (Authorisation reference D0423-01). Schedule C of the licence requires the provision of a secondary WWTP and the discontinuation of the Secondary Discharge.

Irish Water now requests authorisation

- to relocate the primary outfall which is a different location to that authorised in the licence
- Provision of Primary WWTP rather than Secondary Treatment
- Proposed new emission limit values
- Decommissioning of the Secondary discharge

Irish Water has undertaken a modelling study to demonstrates the level of treatment required for the Whitegate-Aghada Agglomeration. The Modelling study demonstrates that Primary treatment will allow the receiving water to meet the relevant quality objectives (i.e maintain Good Status) and relevant provisions of the UWWTD and other Community Directive. Irish Water therefore requests the Agency to set ELVs as proposed under Section D of the application.

The proposed primary treatment upgrade works are being carried out under Irish Water's 2022-2024 Investment Plan (Revenue Cycle 3). The envisaged time period for the commencement of the construction works is Q3 2022 It is anticipated that the construction upgrade works will be completed by Q4 2024. This programme is subject to statutory and budgetary approvals

B.16 Significant Correspondence

Provide a summary of any correspondence resulting from a Section 63 notice or a compliance correspondence issued by the Agency in relation to the waste water works under the Environmental Protection Agency Act 1992 as amended, or the Waste Water Discharge (Authorisation) Regulations 2007 as amended.

Attachment B.11 *should contain a summary of any relevant correspondence issued in relation to a Section 63 notice/ compliance correspondence.*

The applicant is not aware of any Section 63 notices.

There is currently one CI on file for D0423-01 i.e CI001348. This relates to the WWTP upgrade progress update.

B.17 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 as amended.

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

A foreshore licence application has been submitted, a determination in respect of this is expected in Q4, 2021. The reference number associated with the application is FS007027.

SECTION C: DISCHARGES & MONITORING

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 emissions are made or are to be made.

The table below includes details of spill frequencies and volumes along the sewerage network. Grid references are provided are for discharge locations.

Discharge Point Code	Discharge Point Type	Receiving Water Body Name	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference	Frequency of Discharge (days/ annum)	Rate of Discharge (m^3/day@ Average Daily Flow)
New to be Constructed						
SW001	Proposed Primary	Outer Cork Harbour (IE_SW_050_0000)	182518	061575	365	1,041 (30-yr)
Exiting SWO to be Retained						
SW005	SWO / EO – Whitegate PS	Cork Harbour (IE_SW_060_0000)	184024	063840	Unknown-intermittent	Unknown-intermittent
Existing Secondary to be Reused as SWOs						
SW002	SWO / EO – Rostellan PS	Cork Harbour (IE_SW_060_0000)	186875	065819	Unknown-intermittent	Unknown-intermittent
SW003	SWO / EO – Lower Aghada PS	Cork Harbour (IE_SW_060_0000)	185465	065780	Unknown-intermittent	Unknown-intermittent
Existing to be Decommissioned						
SW001	Existing Primary	Cork Harbour (IE_SW_060_0000)	183337	064664	365	Unknown - continuous
GW004	Secondary	Whitegate Groundwater (IE-SW_G_079)	184543	063066	365	Unknown - continuous

- Undertake and provide details of a risk based assessment of the discharge in order to identify the relevant priority substances for monitoring. This assessment shall be undertaken in accordance with *"Guidance on the Screening for Priority Substances for Waste Water Discharge Licences"* issued by the Agency. Provide details of the sources of any priority substances detected during the risk based assessment of discharges, that would be likely to give rise to exceedances of the relevant standards set in the European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended. Provide information on measures that are necessary to reduce or eliminate priority substances in the discharge(s).

As the source of wastewater in Whitegate and Aghada is municipal in nature, it is not considered likely that concentrations of dangerous substances from the agglomeration will impair the environment.

- Details of all discharges of waste water from the agglomeration should be supplied. Tables C.1(a) & (b), should be completed for the primary discharge point from the agglomeration and Tables C.2(a) & (b) should be completed for **each** secondary discharge point, where relevant. Individual Tables must be completed for each discharge point.

  Please see completed tables **C.1(a)**, **(b)** and **C.2(a)** and **(b)**, in this form for discharge details.

- Describe the existing or proposed measures, including emergency procedures, to prevent unintended waste water discharges and to minimise the impact on the environment of such discharges.

  Irish Water are committed to ensuring that the water services infrastructure operates in a manner that supports the achievement of water body objectives under the Water Framework Directive and our obligations under the Birds and Habitats Directives.

  An emergency procedures plan will be developed as part of the process of the design and construction of the new WWTP to ensure unintended waste water discharges and potential impacts on the environment are kept to a minimum.

- Regulation 16(1)(h) of the Waste Water Discharge (Authorisation) Regulations 2007 as amended, requires all applicants to provide the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application.

  Monitoring is carried out bimonthly as per the current WWDL. The current discharge is untreated. **See attachment C.1 (i) for Effluent data**

- Attach associated monitoring data for the receiving water for the 12 months preceding the making of the application. This data should be provided for the primary discharge point and each of the secondary discharge points, if applicable.

  Monitoring data (provided by the EPA) associated with monitoring stations within close proximity to the proposed primary discharge point is provided in **Appendix C.1.(ii)**

- Regulation 16(1)(l) of the regulations requires applicants to give details of compliance with any applicable monitoring requirements and treatment standards.

  A monitoring and sampling programme will be undertaken on completion of the new WwTP in accordance with the relevant standards and frequencies as set out by Irish Water and to comply with the Waste Water Discharge Licence.

- For waste water treatment plants with coastal discharges, provide evidence that the end of the discharge pipe is below the mean spring tide low water line.

  Drawing No. 9 IW-10015229-03-02-008 (see **Attachment C.2**) presents the longitudinal section of the marine outfall and primary

discharge point, SW001. This confirms that the outfall will discharge at approximately
-5.3mOD Malin. The drawing also indicates the lowest astronomical tide levels as -2.6mO.D Malin and confirms that the proposed long sea outfall lies below this level.

Attachment C.1 *should contain all supporting information.*

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

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

Detailed 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).

Where applicable, information on the state of the existing environment should be addressed in the EIAR. **In such cases, it will suffice for the purposes of this section to provide adequate cross-references to the relevant sections in the EIAR.** If there is no EIAR associated with the development, information on the existing environment should be provided here.

D.1. Assessment of Impact on Receiving Surface or Ground Water

- Give summary details and an assessment of the impacts of any existing or proposed emissions on the environment, including environmental media other than those into which the emissions are to be made.

  Irish Water has undertaken a modelling study to demonstrate the level of treatment required for the Whitegate-Aghada Agglomeration. The Modelling study demonstrates that Primary treatment will allow the receiving water to meet the relevant quality objectives and relevant provisions of the UWWTD and other Community Directive.

  The proposed WwTP will provide primary treatment of wastewater, with treatment effluent quality achieving 20% reduction $_{c}$BOD (mg/l) and 50% reduction Suspended Solids (mg/l). Average daily flows of up to 697.5m^3/day (10-year design horizon) are expected at the WwTP.

  The primary discharge from the proposed Whitegate-Aghada WwTP will be to Outer Cork Harbour, WFD code IE_SW_050_0000. The primary discharge will be via a marine outfall, 295m in length from the high-water mark. The EU Water Framework Directive (WFD) has established a Framework for the protection, improvement and management of surface water and groundwaters. The latest WFD status of the coastal water body in the vicinity of Whitegate and Aghada is classified as having 'good' (outer Cork Harbour) or 'moderate' (Cork Harbour) water quality status (period for WFD Status: SW 2013-2018 as presented on the EPA mapping website https://gis.epa.ie/EPAMaps/). The WFD requires "*all Member States to protect and improve water quality in all waters so that we achieve good ecological status by 2015 or, at the latest, by 2027*" (https://www.gov.ie/en/publication/f7c76-water-framework-directive/).

  An assessment of the impact of wastewater discharges from the proposed Whitegate WwTP outfall has been conducted. Near Field and Far Field modelling assessments have been undertaken and are provided in **Attachment D.1** of the application. Supplementary 'discharges' text was compiled in response to a request for information associated with the planning application process. This is also included in **Attachment D.1**.

As part of the far field modelling assessment, a high-resolution MIKE 21 model of Cork Harbour was developed to assess the impact on the receiving water quality from the proposed scheme. The following regulations are the regulatory frameworks relevant to the study area:

- Urban Wastewater Treatment Regulations 2001
- European Communities Environmental Objectives (Surface Waters) Regulations 2009
- Bathing Water Quality Regulations 2008
- European Communities (Quality of Shellfish Waters) Regulations 2006

These directives determine the water quality parameters to be assessed and their respective concentration thresholds, hereafter known as the Environmental Quality Standard (EQS) thresholds.

The mixing zone is defined as the area around the outfall that the surface concentration is above the regulatory threshold for each parameter. The thresholds for Coastal waterbodies are prescribed in the Surface Water Regulations as follows:

- BOD 95th percentile ≤ 4mg/l
- DIN 50th percentile ≤ 0.25mg/l

As the discharge point is to a coastal water the BOD EQS do not strictly apply. However, the transitional EQS for BOD has been applied and included for information purposes.

An outfall discharge representing an average flow from the proposed WwTP for a 15-year design horizon has been used for this modelling assessment.

Model results indicate that the 95%ile concentrations of both E. Coli and Intestinal Enterococci are significantly reduced in the outer area of Cork Harbour with the proposed scheme in place. The results also indicate that the 50%ile concentrations of other nutrients modelled, namely Dissolved Inorganic Nitrogen, Molybdate Reactive Phosphorus, Total Ammonia and Unionised Ammonia, are greatly reduced in the outer harbour area. These results demonstrate the improvement in the water quality of Cork Harbour that the proposed scheme will have.

The model results indicate there may be limited increase in the concentrations of the modelled water quality parameters in the immediate vicinity of the primary discharge. These localised increases in concentrations however are minor and do not lead to the exceedance of EQS thresholds at any of the designated EPA monitoring points.

The mixing zone in relation to E.Coli is presented in Figure 56 of the Far Field modelling report. It shows that the outfall's E.Coli mixing zone exceeding the 500 cfu/100ml threshold (set by the Bathing Water Quality Regulations) is limited to approximately 2,500m^2.

There are no discernible mixing zone envelopes for the other water quality parameters, indicating that these parameters fall below their respective EQS thresholds in the immediate vicinity of the outfall.

The proposed scheme does not cause any of the EQS thresholds in Cork Harbour to be exceeded and the discharges from the proposed WwTP for

Whitegate-Aghada are in full compliance with the relevant European Directives and Regulations. In terms of receiving water quality, primary treatment is therefore deemed to be an appropriate level of treatment for the proposed WwTP.

- Provide summary details and an assessment of the impacts of any existing or proposed emissions on the surface water or ground (aquifers, soils, sub-soils and rock environment), including any impact on environmental media other than those into which the emissions are to be made.

  An existing secondary discharge point GW004 discharges wastewater (little or no treatment) to groundwater. This discharge will cease with the implementation of the proposed scheme. There is expected to be an overall improvement in water quality as a result of the proposed Whitegate-Aghada Sewerage through treatment of previously untreated discharges.

  It is not expected that the proposed discharges will have any impact on surface water quality.

- Where a discharge is being made to a small stream, provide evidence that there is a background flow in the stream all year round.

  Not applicable.

- Provide details and evaluate any direct or indirect discharges to groundwater that may be associated with the waste water treatment plant in accordance with the EPA Guidance document *'Guidance on the Authorisation of Direct Discharges to Groundwater'* (2014) and the Agency published *'Guidance on the Authorisation of Discharges to Groundwater'* (2011).

  Not applicable.

- Describe the existing environment in terms of water quality with particular reference to environmental quality standards or other legislative standards. Give details of any designation under any Council Directive or Regulations that apply in relation to the receiving water.

  The table below shows the latest WFD quality status for the study area waterbodies

Waterbody Name	WFD Code	Waterbody Type	WFD Status
Outer Cork Harbour	IE_SW_050_0000	Coastal	Good
Cork Harbour	IW_SW_060_0000	Coastal	Moderate
Whitegate	IE_SW_G_079	Groundwater	Good

Period for WFD Status: SW2013-2018 (https://gis.epa.ie/EPAMaps/)

Waters in the Rostellan area, circa 7km for the proposed outfall, are designated as classified shellfish production areas under the Communities (Quality of Shellfish Waters) Regulations, 2009 The proposed scheme's impact on these Shellfish Waters was assessed as part of the water quality modelling. As there are no specific standards for the in-water concentration of bacteria for the purposes of assessing the impacts on shellfisheries. Irish Water has applied an interim target for "Good" bathing water to all

waters to identify areas where this could impact on designated shellfish areas.

The nearest designated bathing water location is circa 5km away from the proposed outfall at Fountainstown. It has been classified as having "Excellent" water quality for the year 2020. White Bay Beach, although not a designated bathing water location, is a popular swimming location and frequently utilised by local residents during the summer months. The impact from the proposed scheme on both of these locations has been considered and addressed in the far field modelling report.

There are SACs and SPAs within a 15km radius of the proposed sewerage scheme. These are as follows:

- Great Island Channel SAC (4km);
- Cork Harbour SPA (0km);
- Ballycotton Bay SPA (13.3km).

Further information on the above SAC and SPAs is provided in **Annex 1- Table D.1** of this application.

- Provide information demonstrating 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;

  - 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,
  - Marine Strategy Framework Directive 2008/56/EC, and
  - European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended.

The proposed Whitegate-Aghada Sewerage Scheme will end the practice of discharge of untreated wastewater from sewer networks to Cork Harbour and groundwater which will have a significant positive impact on surface water quality.

The planned works will ensure that the emissions from the agglomeration will comply with and not result in the contravention of the above Directives. Further details on the proposed WwTP are detailed in **Section B.4** of this application.

- Describe, where appropriate, measures for minimising pollution over long distances or in the territory of other states.

The AA Screening report concluded that "no pathway" exists by which the proposed development which could impact on Ballycotton Bay SPA. The Great Island SAC was screened out as no potential impacts exists as a result of the proposed scheme.

The NIS for the scheme concludes that the only European site for which potential significant impacts have bene identified is Cork Harbour SPA. No potential negative impacts during operation have been identified and that works will result in an improvement in water quality. EIA Screening and Ecological Impact Assessment reports have also been compiled. A range of mitigation measures have been incorporated into the design and construction stages of the scheme with the purpose of avoiding or minimising impacts on the qualifying interests and conservation objectives of Cork Harbour SPA.

These reports are provided in **Attachment B.13 (iii)** and **Attachments D.2** of this application.

- This section should also contain full details of any modelling of discharges from the agglomeration. Full details of the assessment and any other relevant information on the receiving environment should be submitted as **Attachment D.1.**

  An assessment of the impact of wastewater discharges from the proposed Whitegate-Aghada Sewerage Scheme has been conducted. The study is entitled 'Whitegate-Aghada Far Field Modelling' and incudes a near field modelling assessment in **Attachment D.1** of the report. The proposed scheme does not cause any of the Environmental Quality Standard thresholds in Cork Harbour to be exceeded and the discharges from the proposed Wastewater Treatment Plant at Ballytigeen TD, Whitegate are in full compliance with the following regulations:
    - Urban Wastewater Treatment Regulations 2001
    - European Communities Environmental Objectives (Surface Waters) Regulations 2009
    - Bathing Water Quality Regulations 2008
    - European Communities (Quality of Shellfish Waters) Regulations 2006

  The purpose of the far field modelling report was to assess compliance of the following water quality parameters (see Section 1.4.5 of the modelling report) with the environmental quality standard threshold levels and adhere with relevant water quality regulations.

    - Escherichia Coli;
    - Intestinal Enterococci
    - Dissolved Inorganic Nitrogen
    - Molybdate Reactive Phosphorus

  This approach has also been adopted for the purposes of assessing the non-regulatory parameters:
    - Total Ammonia
    - Unionised Ammonia

  A detailed high-resolution MIKE21 numerical model of Cork Harbour and the area of the Celtic Sea adjacent the entrance of the harbour at Roches Point has been developed. The model consists of two separate parts (hydrodynamic model and water quality (EcoLab) model) which are dynamically coupled and run together as a single model.

  Two separate scenarios have been considered as part of the study:

- The Existing (baseline) Scenario: This represents the current situation- i.e. the average discharge of untreated waste from Whitegate and Aghada based on a 2238p.e.

- The Proposed Scenario: the average discharge of primary treated effluent from the proposed WwTP into Outer Cork Harbour via the proposed marine outfall for a 15-year design horizon. An additional model run was also undertaken for the 30-year design horizon looking at coliform (E.Coli and Intestinal Enerococci) concentrations.

Results of the far field water quality modelling indicate that 95%ile concentrations of both E. Coli and Intestinal Enterococci are significantly reduced in the outer area of Cork Harbour with the implementation of the proposed Sewerage Scheme. The results also indicate that the 50%ile concentrations of Dissolved Inorganic Nitrogen, Molybdate Reactive Phosphorus, Total Ammonia and Unionised Ammonia are reduced in the outer Harbour area.

The results indicate that the 95%ile concentrations of both E. Coli and Intestinal Enterococci, as well as the 50%ile concentrations of other modelled nutrients, are increased in the vicinity of the proposed outfall location. However, the increases do not lead to the EQS thresholds at any of the designated EPA monitoring points in the vicinity of the outfall to be exceeded. The proposed discharge does not negatively impact on the water quality of the Fountainstown bathing water location or the Rostellan Shellfish Waters.

The mixing zone for the proposed outfall has been estimated as part of the 'Whitegate-Aghada Far Field Modelling' report (see section 6.7 of the report). Results are presented in figures 56-61 with targets set at the relevant EQS threshold.

For E.Coli, it can be seen that the mixing zone is limited to the immediate vicinity of the outfall and that the Whitebay shoreline maintains excellent water quality. The zone that exceeds the 500 cfu/100ml threshold (set by the Bathing Water Quality Regulations) is approximately 2,500m^2 in size.

For Intestinal Enterococci, Dissolved Inorganic Nitrogen, Molybdate Reactive Phosphorus, Total Ammonia and Unionised Ammonia, no mixing zone envelope is shown, indicating that the environmental quality standards are not exceeded at the outfall location for any of these water quality parameters. The mixing zone for each water quality parameter is in compliance with the targets outlined in Table 11-3 of the Irish Water's Technical Standards for Marine Modelling (2018) and can be concluded that the proposed scenario ensures the receiving water quality will be maintained at the outfall location.

A 30-year future scenario model was also simulated which used the 30-year average flow from the proposed WwTP (1,041m3/day). This model run also increased the outfall flow rates at all the relevant outfalls in Cork Harbour based on projected population growth rates. The results of this model run demonstrated that none of the coliform EQS thresholds were exceeded at the any of the monitoring points within the harbour.

The proposed scheme does not cause any of the Environmental Quality Standard thresholds in Cork Harbour to be exceeded and the discharges

from the proposed Wastewater Treatment Plant for Whitegate-Aghada are in full compliance with the relevant regulations.

D.2. Appropriate Assessment

- Where applicable, provide a copy of any screening for Appropriate Assessment report and Natura Impact Statement (NIS) that was prepared for consideration by any planning/public authority as defined in Regulation 2(1) of the European Communities (Birds and Natural Habitats) Regulations 2011 as amended, in relation to the waste water works. Where a determination that an Appropriate Assessment is required has been made by any planning/public authority in relation to the waste water works, a copy of that determination and any screening report and Natura Impact Statement (NIS), and any supplementary information furnished in relation to any such report or statement, which has been provided to the planning/public authority for the purposes of the Appropriate Assessment shall be included.

  Appropriate Assessment screening and a Natura Impact Statement have been undertaken as part of the planning application for the proposed Whitegate-Aghada Sewerage Scheme. The planning application was submitted to Cork County Council in November 2020 and granted on 30/08/2021 . A copy of the NIS and AA Screening report is provided in **Attachment D.2 (i)**.

- Undertake a screening for Appropriate Assessment and submit a copy of the screening report in Attachment D.2.

  Appropriate Assessment screening has taken place and a copy of the report is provided in **Appendix A** of the NIS which is included in **Attachment D.2 (i)**.

- Complete Table D.1 providing details of all European Sites considered as part of the screening for appropriate assessment.

  Please see completed **Table D.1**, which can be found in **Annex 1**.

- Based on the information provided above, indicate whether the discharge(s), individually or in combination with other plans or projects, is likely to have a significant effect on a European Site(s), in view of best scientific knowledge and the conservation objectives of the site(s). Provide reasons for this determination.

  The AA Screening report concluded that "no pathway" exists by which the proposed development which could impact on Ballycotton Bay SPA. The Great Island SAC was screened out as no potential impacts exists as a result of the proposed scheme.

  A number of Special Conservation Interests for the Cork Harbour SPA have been screened in for further assessment for Stage 2 Appropriate Assessment.

- Where it cannot be excluded, on the basis of objective scientific information, following screening for Appropriate Assessment, that the discharge(s), either individually or in combination with other plans or projects, will have a significant effect on a European Site, provide a Natura Impact Statement (in Attachment D.2), as defined in Regulation 2(1) of

the European Communities (Birds and Natural Habitats) Regulations 2011 as amended.

The only European site for which potential significant impacts have been identified is the Cork Harbour SPA. It is noted that no potential negative impacts during operation have been identified and that works will result in an improvement in water quality.

A range of mitigation measures have been incorporated into the project design, and other mitigation measures have been developed and proposed for the construction stage, with the purpose of avoiding or minimising impacts on the qualifying interests and conservation objectives of the Cork Harbour SPA. No difficulties in the effective implementation of these measures was identified. There were no mitigation measures identified for the operation of the WWTP.

The authors of the NIS concluded that *"the proposed development on its own and in combination with other plans or projects will not have an adverse effect on the integrity of the Cork Harbour SPA or any other Natura 2000 sites. Cork County Council, as the competent authority, will make the final determination in this regard"*.

A copy of the Natura Impact Statement (NIS) was submitted to Cork County Council as part of the planning submission for the proposed Whitegate-Aghada Sewerage Scheme and is presented in **Attachment D.2** of this application.

Attachment D.2 *should contain an Appropriate Assessment screening report and where applicable a Natura Impact Statement.*

D.3. Programme of improvements

- Provide details on a programme of improvements to ensure that discharges from the agglomeration will not result in significant environmental pollution and details to ensure that all emissions from the agglomeration will comply with, or will not result in the contravention of any national or European legislation.

  There are no additional investments planned beyond the current work programme, further details of which are included in **Section B.4** of this application. The Modelling study demonstrates that the primary treatment proposed will not prevent receiving water from maintaining its good status. Irish Water therefore requests the Agency to set ELVs as proposed under Section D of the application.

Attachment D.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.*

SECTION E: DECLARATION

Declaration

I hereby make an application for a waste water discharge licence/revised licence, pursuant to the provisions of the Waste Water Discharge (Authorisation) Regulations 2007 as amended.

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 Irish Water 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 the Applicant or any person acting on the Applicant's behalf.

Signed by: _____ **Date :** 2nd November 2021
(on behalf of the organisation)

Print name: Sean Laffey

Position in organisation: Head of Asset Management

ANNEX 1: TABLES/ATTACHMENTS

Table C.1(a): Emissions to Surface/Ground Water – Primary Discharge Point

Discharge Point Code	Proposed SW001
Normal Volume Emitted/day (m^3/day)	N/A -WwTP not yet constructed- estimated dry weather flow: 10-year design horizon (2,479 PE): 588m^3/day
Maximum Volume Emitted/day (m^3/day)	N/A- WwTP not yet constructed- estimated average daily flow: 10-year design horizon (2,479 PE): 695m^3/day
Period of Emission (avg)	WwTP not yet constructed- estimated period of emission is 24hrs per day

Table C.1(b): Emissions to Surface/Ground Water – Characteristics of the Emission - Primary Discharge Point

Results for SW001 -Untreated discharge – Grab Sample

Substance	As Discharged		
	Unit of Measurement	Sampling Method	Max Daily Average*
pH	pH	Grab Sample- Untreated Discharge	8
Temperature	°C	N/A	
Suspended Solids	mg/l	Grab Sample- Untreated Discharge	466
Total Ammonia (as N)	mg/l	Grab Sample- Untreated Discharge	62.6
Carbonaceous Biochemical Oxygen Demand	mg/l	Grab Sample – Untreated Discharge	285
Chemical Oxygen Demand - Cr	mg/l	Grab Sample- Untreated Discharge	702
Total Nitrogen (as N)	mg/l	TBC	N/A
Total Phosphorus (as P)	mg/l	TBC	N/A
Orthophosphate (as P) - Unspecified	mg/l	TBC	N/A

* Max daily average refers to the maximum concentration of the relevant substance recorded from composite sample results during the monitoring period.

Table C.2(a): Emissions to Surface/Ground Water – Secondary Discharge Point
(1 table per discharge point)

Discharge Point Code	Not applicable. No proposed discharges to surface/ ground waters
Normal Volume Emitted/day (m^3/day)	
Maximum Volume Emitted/day (m^3/day)	
Period of Emission (avg)	

Table C.2(b): Emissions to Surface/Ground Water – Characteristics of the Emission - Secondary Discharge Point
(1 table per discharge point)

Substance	As Discharged		
	Unit of Measurement	Sampling Method	Max Daily Average*
pH	pH	N/A	N/A
Temperature	◦C	N/A	N/A
Suspended Solids	mg/l	N/A	N/A
Total Ammonia (as N)	mg/l	N/A	N/A
Carbonaceous Biochemical Oxygen Demand	mg/l	N/A	N/A
Chemical Oxygen Demand - Cr	mg/l	N/A	N/A
Total Nitrogen (as N)	mg/l	N/A	N/A
Total Phosphorus (as P)	mg/l	N/A	N/A
Orthophosphate (as P) - Unspecified	mg/l	N/A	N/A

* Max daily average refers to the maximum concentration of the relevant substance recorded from composite sample results during the monitoring period.

Table D.1: List of European Sites assessed, their associated qualifying interests and conservation objectives.

	European Site Name & Site Code	**Distance/ Direction of European Site from discharge(s)** (e.g. X km east downstream of the discharge(s) on the X River.)	**Qualifying interests** List all habitats and species listed in the Conservation Objectives document on the NPWS website. Denote priority habitats with an *. For species list the English Name & *Latin Name.*	**Conservation objectives** Cite the most recent Conservation Objectives document on the NPWS website for the European Site.
1	Great Island Channel SAC (site code: 001058)	4km north of the proposed development	• Mudflats and sandflats not covered by seawater at low tide [1140]; • Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	NPWS (2014) Conservation Objectives: Great Channel SAC 001058. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht Series Editor: Rebeca Jeffrey ISSN 2009-4086
2	Cork Harbour SPA (Site Code 0040300)	0km- the proposed Rostellan pumping station site and rising main lie within the boundary of the SPA.	• Little Grebe *Tachybaptus ruficollis* [A004]; • Great Crested Grebe *Podiceps cristatus* [A005]; • Cormorant *Phalacrocorax carbo* [A017]; • Grey Heron *Ardea cinerea* [A028]; • Shelduck *Tadorna tadorna* [A048]; • Wigeon *Anas Penelope* [A050]; • Teal *Anas crecca* [A052];	NPSW (2014) Conservation Objectives: Cork Harbour SPA 004030. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht Series Editor: Rebecca Jeffrey ISSN 2009-4086

			• Pintail *Anas acuta* [A054]; • Shoveler *Anas clypeata* [A056]; • Red-breasted Merganser *Mergus serrator* [A069]; • Oystercatcher *Haematopus ostralegus* [A130]; • Golden Plover *Pluvialis apricaria* [A140]; • Grey Plover *Pluvialis squatarola* [A141]; • Lapwing *Vanellus vanellus* [A142]; • Dunlin *Calidris alpina alpina* [A149]; • Black-tailed Godwit *Limosa limosa* [A156]; • Bar-tailed Godwit *Limosa lapponica* [A157]; • Curlew *Numenius arquata* [A160]; • Redshank *Tringa totanus* [A162]; • Black-headed Gull *Chroicocephalus ridibundus* [A179]; • Common Gull *Larus canus* [A182]; • Lesser Black-backed Gull *Larus fuscus* [A183];	

			• Common *Tern Sterna hirundo* [A193]; • Wetlands [A999].	
3	Ballycotton Bay SPA (Site Code: 004022)	13.3km east of proposed development.	• Teal *Anas crecca* [A052]; • Ringed Plover *Charadrius hiaticula* [A137]; • Golden Plover Pluvialis apricaria [A140]; • Grey Plover *Pluvialis squatarola* [A141]; • Lapwing *Vanellus vanellus* [A142]; • Black-tailed Godwit *Limosa limosa* [A156]; • Bar-tailed Godwit *Limosa lapponica* [A157]; • Curlew *Numenius arquata* [A160]; • Turnstone *Arenaria interpres* [A169]; • Common Gull *Larus canus* [A182]; • Lesser Black-backed Gull *Larus fuscus* [A183]; • Wetlands [A999].	NPWS (2014) Conservation Objectives: Ballycotton Bay SPA 004022. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Series Editor: Rebecca Jeffrey ISSN 2009-4086

ANNEX 2: Licence Application Checklist

Section	Attachment Number	Document	Attached by Applicant √
Non-Technical Summary	A.1	Non-technical summary	√
General	B.1	Agglomeration boundary map	√
	B.2	Site boundary and overall site plan	√
	B.3	Primary discharge point location map	√
	B.4	Secondary discharge point location map(s)	√
	B.5	Storm Water Overflow location map(s)	√
	B.6	Emergency Overflow location map(s)	√
	B.7	Supporting information on Abstractions	N/A
	B.8	Most recent planning permission, including all conditions, the planning inspectors report and an EIAR where required.	√
	B.9	A copy of the site notice and newspaper notice	√
	B.10	Most recent Capital Investment Programme, including a copy of any approved funding	N/A
	B.11	Section 63 Notices/ compliance correspondence	N/A
	B.12	Most recent licence issued under the Foreshore Act 1933 as amended	N/A
Discharges & Monitoring	C.1	Supporting information on Discharges and Monitoring	√
Existing Environment & Impact of the Discharge(s)	D.1	All supporting information on the assessment of the impact on the receiving waters	√
	D.2	Appropriate Assessment screening report and where applicable a Natura Impact Statement	√
	D.3	Most recent Programme of Improvements	N/A

ANNEX 3: Compliance with Waste Water Discharge (Authorisation) Regulations 2007 as amended

- Regulation 16 of the Waste Water Discharge (Authorisation) Regulations 2007 as amended sets out the information which must, in all cases, accompany a discharge licence application. Applicants should ensure that the application fully complies with the legal requirements of Regulation 16 of the 2007 Regulations as amended.

- Regulation 16(3) states that an application for a licence shall be accompanied by such fee as is appropriate having regard to the provisions of Regulations 38 and 39.

Has the appropriate fee been paid?	**Yes/No**	**Amount**
	Yes	€20,000

- Regulation 16(4) states that an original application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under Regulation 16(3) in hardcopy or in an electronic or other format as specified by the Agency.

  The application shall include a signed original, 1 hardcopy of the application and 2 CD versions of the application (PDF files).

Has this documentation been provided?	**Yes**	**No**

- Regulation 17 states that where a treatment plant associated with the relevant waste water works is or has been subject to the European Communities (Environmental Impact Assessment) Regulations 1989 to 2001, in addition to compliance with the requirements of Regulation 16, an application in respect of the relevant discharge shall be accompanied by a copy of an environmental impact statement and approval in accordance with the Act of 2000 in respect of the said development and may be submitted in an electronic or other format specified by the Agency.

  Where applicable, the application shall be accompanied by 2 hardcopies of the EIAR and 2 CD versions of the EIAR (PDF files).

Has this documentation been provided where applicable?	**Yes**	**No**