



**ATTACHMENT B.5:**

**ENVIRONMENTAL IMPACT ASSESSMENT  
REPORT  
NON-TECHNICAL SUMMARY  
DECEMBER 2022**

## **BANDON WASTE WATER DISCHARGE LICENCE REVIEW – D0136-01**

### **ENVIRONMENTAL IMPACT ASSESSMENT REPORT - NON-TECHNICAL SUMMARY**



# IRISH WATER

## BANDON WASTE WATER DISCHARGE LICENCE REVIEW

### EIAR NON-TECHNICAL SUMMARY

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**DECEMBER 2022**

<b>PROJECT NO. 20893-06</b>					
<b>Revision</b>	<b>Reason for Revision</b>	<b>Prepared by</b>	<b>Reviewed by</b>	<b>Approved by</b>	<b>Issue Date</b>
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<b>Final</b>	Final for WWDL Review	NOD	CAS/UD	CAS	13/12/2022

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## 1. INTRODUCTION

An Environmental Impact Assessment Report (EIAR) has been prepared in support of an application made to the Environmental Protection Agency (EPA) by Irish Water (IW) for the Bandon Waste Water Discharge Licence (WWDL) D0136-01 Review Application.

The subject matter of this EIAR solely relates to the Bandon agglomeration operational discharges, namely, (i) a Primary Discharge (SW001) from the upgraded Bandon Waste Water Treatment Plant (WwTP), (ii) Dual Function Overflows (SW002, SW004, SW016, SW017 and SW020), (iii) Storm Water Overflows (SW008, SW014 and SW018) and (iv) Emergency Overflow (SW019). These operational discharges are herein referred to as the “the Project” in this document.

This document is a summary of the information contained in the EIAR. For detailed information please consult the main EIAR document.

### 1.1. Location of the Project

**Figure 1.1** shows the location of the Bandon WwTP, the proposed Bandon agglomeration boundary alongside the associated operational discharges and key elements of infrastructure associated with the WWDL Review Application.

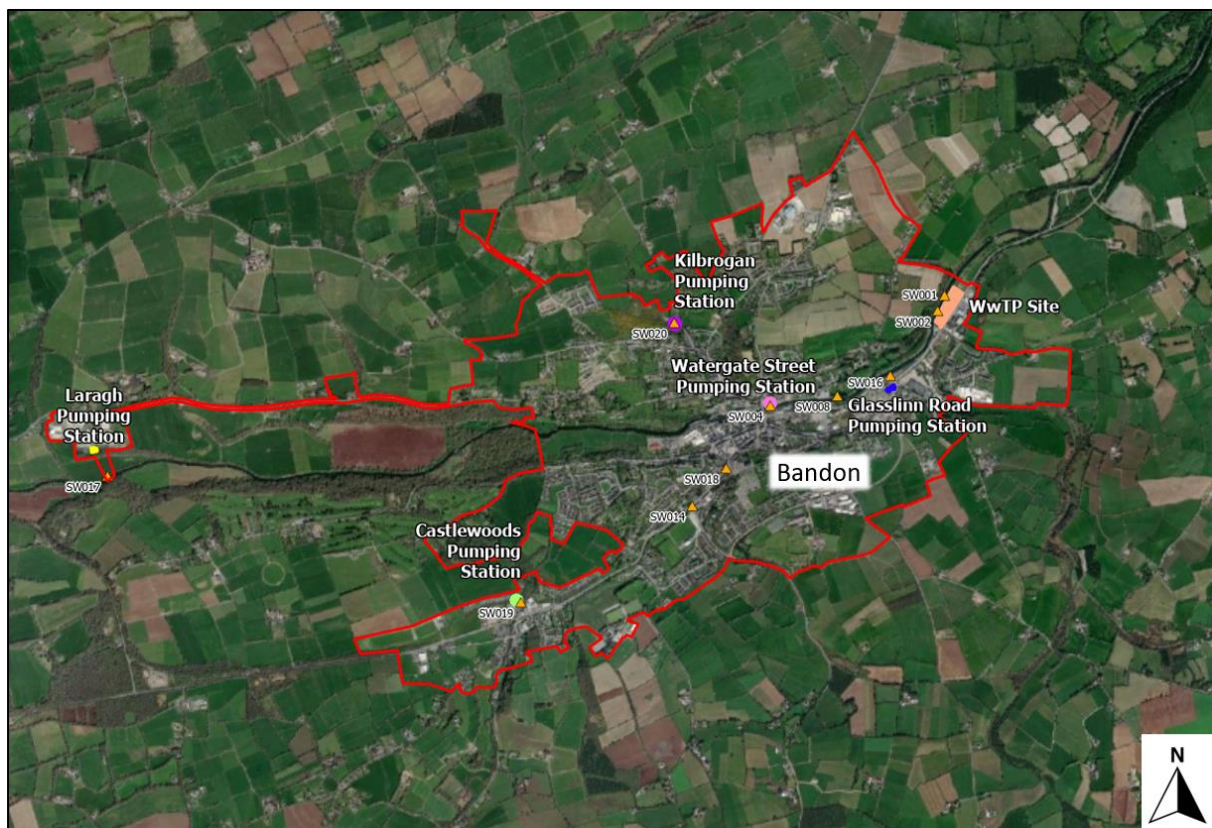


Figure 1.1 Location of Bandon Agglomeration (red line), Bandon WwTP, Operational Discharges, Laragh Pumping Station, Watergate Street Pumping Station, Kilbrogan Pumping Station, Castlewoods Pumping Station and Glasslinn Road Pumping Station.

## 1.2. Background

The Bandon agglomeration (D0136-01), (*i.e.*, the area in Bandon which is connected *via* a pipe network to the Bandon WwTP), is served by a sewerage system that comprises gravity sewers, Pumping Stations, rising mains and the aforementioned WwTP.

Improvement works within the Bandon agglomeration have taken place over recent years, or are in the process of being completed, and involved several elements as listed below:

- Bandon WwTP and Glasslinn Road Pumping Station Upgrade (Bandon Sewerage Scheme) – These works were completed in Q2 2021;
- Bandon IDA Laragh WwTP Upgrade - This upgrade project was completed in Q3 2018. As part of this WWDL Review Application, the Bandon IDA Laragh Agglomeration (A0362-01) is to be amalgamated into the current Bandon agglomeration; and
- Bandon Watermain & Sewer Network Project including the removal of 10 no. Storm Water Overflows (SWOs) – These works are underway and are due to be completed by the end of Q1 2023.

The above projects were deemed required to ensure the Emission Limit Values (ELVs) as per WWDL D0136-01 were complied with; to accommodate current and future flows and increase flow capacity in the system; to replace of plant and equipment that had exceeded its operational life; to reduce sewage discharges to the Bandon River which were identified as a pressure in the catchment; to reduce risk of flooding from sewer network in Bandon Town; and, to ultimately ensure effective management of waste water treatment process to protect the environment and public health.

A summary of the above projects is provided in the sections below.

### 1.2.1. Bandon Waste Water Treatment Plant / Glasslinn Road Pumping Station Upgrade (Bandon Sewerage Scheme)

Upgrade works at Bandon WwTP and Glasslinn Road Pumping Station were required to improve the treatment processes, thereby resulting in an improved effluent discharge quality. The upgraded plant was designed to meet the ELVs stipulated in the WWDL (D0136-01). The upgrade works also included the replacement of existing plant and equipment that had exceeded their normal operational life. This project was completed in Q2 2021. Refer to **Section 1.2.2** of the EIAR for more details.

### 1.2.2. Bandon IDA Laragh WwTP Upgrade

As part of this WWDL Review, the Bandon IDA Laragh Agglomeration (A0362-01) is to be amalgamated into the current Bandon agglomeration.

The Bandon IDA Laragh WwTP upgrade, which was completed in Q3 2018, comprised of the provision of a new Pumping Station to collect waste water from the existing industrial estate and the pumping of the collected load to the Bandon WwTP for treatment. As part of this work, the Bandon IDA WwTP was decommissioned. Refer to **Section 1.2.3** of the EIAR for more details.

### 1.2.3. Bandon Watermain & Sewer Network Project

The Bandon Watermain & Sewer Network Project will increase flow capacity in the system, reduce sewage discharges to the River Bandon and will reduce surcharging of drainage

pipe networks in the town. Works relating to this project are underway and are due to be completed by the end of Q1 2023. Refer to **Section 1.2.4** of the EIAR for more details.

After completion of the Bandon Watermain & Sewer Network Project, there will be only 10 no. operational discharges within the agglomeration:

- The Primary Discharge (SW001) which will be discharging treated waste water to the River Bandon;
- A Dual Function Overflow which will discharge only during a storm event or an emergency event from the WwTP to the River Bandon (SW002);
- A Dual Function Overflow which will discharge only during a storm event or an emergency event from the Watergate Street Pumping Station to the River Bandon (SW004);
- A Storm Water Overflow which will discharge only during a storm event to the River Bandon (SW008);
- A Storm Water Overflow which will discharge only during a storm event to the River Bandon (SW014);
- A Dual Function Overflow which will discharge only during a storm event or an emergency event from the Glasslinn Road Pumping Station to the River Bandon (SW016);
- A Dual Function Overflow which will discharge only during a storm event or an emergency event from the Laragh Pumping Station to the River Bandon (SW017);
- A Storm Water Overflow which will discharge only during a storm event to the River Bandon (SW018);
- An Emergency Overflow which will discharge only during an emergency event from the Castlewoods Pumping Station to the River Bandon (SW019); and,
- A Dual Function Overflow which will discharge only during a storm event or an emergency event from the Kilbrogan Road Pumping Station to the River Bandon (SW020).

These operational discharges are the subject of this EIAR.

**Section 2.2** of this Non-Technical Summary explains why an EIAR is required.

#### **1.2.4. Need for D0136-01 Waste Water Discharge Authorisation Review**

Following an examination of the Bandon Waste Water Discharge Authorisation (WWDA) in June 2021, the EPA concluded that the current WWDA does not satisfy the environmental requirements of the Waste Water Discharge (Authorisation) Regulations 2007, as amended. The reasoning for their conclusion and recommendation for a review of the current WWDA D0136-01 was based on the following:

1. The licence was granted over 3 years ago;
2. Planning permission has been granted for proposed development works associated with the licence.
3. The agglomeration is included in IW's investment plan.
4. There has been a material change, which could not reasonably have been foreseen when the licence was granted, in relation to the receiving waters, namely, the deterioration of the status of the Bandon River (Bandon\_090) from



'Good' to 'Moderate'. [Note: Since the receipt of the above examination from the EPA, the 2016-2021 WFD assessment period has been published and the WFD status of the Bandon\_090 is now classed as Good status].

The p.e at the time of the determination of D0136-01 in 2015 was less than 10,000 p.e. This application relates to a p.e. of 14,456 i.e., > 10,000 p.e. threshold band.

As part of this WWDL Review a more onerous Ortho-P ELV of 1.6mg/l is being proposed in order to meet the Good-status 95%ile Environmental Quality Standard (EQS) downstream of the primary discharge.

The inclusion of a Total Phosphorus (TP) ELV of 2mg/l is being proposed as part of this Review due to the Upper Bandon Estuary nutrient sensitive estuary (P limited) being located ca. 5km downstream of the primary discharge point, and the fact that the p.e. of the agglomeration will be greater than 10,000.

As part of this WWDL Review, the Bandon IDA Laragh Agglomeration (A0362-01) will be amalgamated into the current Bandon agglomeration, and CoA A0362-01 will be surrendered.

This Review also relates to inclusion of 5 no. overflows (i.e., SW016, SW017, SW018, SW019 and SW020) into the licence, and the removal of 10 overflows from the agglomeration (i.e., SW003, SW005-SW007, SW009-SW013, SW015).

### 1.2.5. Subject Matter of EIAR

As mentioned, this EIAR, being submitted with this WWDL Review Application, considers the impact of the operational discharges associated with the Bandon agglomeration. It does not assess the impacts associated with the construction of the upgrade projects which have already received planning permission or have been classed as exempted development.

A full description of the operational discharges which are the subject matter of the Bandon WWDL Review Application is provided in **Chapter 3** of the EIAR main document.

### 1.2.6. EIAR Team

**Table 1.1** lists the competent experts who were involved in the preparation of each Chapter of the EIAR.

*Table 1.1: EIA Chapters and Competent Experts*

EIA Chapter	Company	Name & Qualifications
Chapter 1 - Introduction	Nicholas O'Dwyer Ltd	Krista Farrugia, Principal EIA Consultant, BSc, MSc, PgDip, PIEMA  Ursula Daly, Environmental Consultant, Nicholas O' Dwyer Ltd., BSc
Chapter 2 - The EIA Process		
Chapter 3 - Description of the Project and Site		
Chapter 4 - Policy & Legislative Context		

EIA Chapter	Company	Name & Qualifications
Chapter 5 - Biodiversity	Thorne Ecology	Kate Harrington, Principal Ecologist, MSc, MCIEEM
Chapter 6 - Water	AWN Consulting Ltd	Teri Hayes, Director, BSc MSc PGeol EurGeol
Chapter 7 - Population & Human Health	Enviroguide Consulting	Janet O'Shea, Technical Director, BSc, IEMA, MCIWM, C. Env
Chapter 8 - Material Assets	Enviroguide Consulting	Charlotte Lawler-Greene, Principal Environmental Consultant, BSc, MSc
Chapter 9 - Traffic and Transport	Nicholas O'Dwyer Ltd	Graham Young, Nicholas O'Dwyer Ltd., Senior Engineer, CEng, Dip. PM, BA BAI
Chapter 10 - Air Quality and Climate	AWN Consulting Ltd	Ciara Nolan, Senior Air Quality Consultant, MSc, BSc, AMIAQM, AMIEnvSc
Chapter 11 - Noise and Vibration	AONA Environmental Consulting Ltd	Mervyn Keegan, Director, MSc, BSc, MIAQM, MIOA
Chapter 12 - Odour	AWN Consulting Ltd	Ciara Nolan, Senior Air Quality Consultant, MSc, BSc, AMIAQM, AMIEnvSc
Chapter 13 - Archaeology, Architectural and Cultural Heritage	Courtney Deery Heritage Consultancy Ltd.	Lisa Courtney, Director, BA, MSc, IAI, ICOMOS
Chapter 14 - Lands, Soils and Geology	AWN Consulting Ltd	Teri Hayes, Director, BSc MSc PGeol EurGeol
Chapter 15 - Landscape and Visual	Stephenson Halliday	Daniel Leaver, Associate Director, BSc, MSc, CMLI
Chapter 16 - Risk of Major Accidents and/or Disasters	Nicholas O'Dwyer Ltd	Krista Farrugia, Principal EIA Consultant, Nicholas O'Dwyer Ltd., BSc, MSc, PgDip, PIEMA
Chapter 17 - Interactions	Nicholas O'Dwyer Ltd.	Krista Farrugia, Principal EIA Consultant, Nicholas O'Dwyer Ltd., BSc, MSc, PgDip, PIEMA Ursula Daly, Environmental Consultant, Nicholas O'Dwyer Ltd., BSc

EIA Chapter	Company	Name & Qualifications
Chapter 18 – Schedule of Mitigation Measures	Nicholas O’Dwyer Ltd.	Ursula Daly, Environmental Consultant, Nicholas O’ Dwyer Ltd., BSc
Chapter 19 - Bibliography	Nicholas O’Dwyer Ltd.	Ursula Daly, Environmental Consultant, Nicholas O’ Dwyer Ltd., BSc
Chapter 20 – Abbreviations	Nicholas O’Dwyer Ltd.	Ursula Daly, Environmental Consultant, Nicholas O’ Dwyer Ltd., BSc

In addition to the main contributors to the EIAR, information on the contents of this EIAR was sought from relevant stakeholders in an EIA scoping consultation process. Refer to **Section 2.3** below for further details.

## 2. EIA PROCESS

### 2.1. Introduction

The process by which the *likely significant effects* of a Project on the environment are assessed is set out in the EU EIA Directive 2011/92/EU and has been transposed to Irish law in terms of Waste Water Discharges by S.I. No. 214/2020 - European Union (Waste Water Discharge) Regulations 2020.

The EIA process includes a number of key characteristics:

- It is systematic, comprising a sequence of tasks defined both by regulation and by practice;
- It is analytical, requiring the application of specialist skills from the environmental sciences;
- It is impartial, its aim being to inform the decision-makers;
- It is consultative, with provision being made for obtaining feedback from interested parties, including local authorities and statutory agencies; and
- It is interactive, allowing opportunities for environmental concerns to be addressed during the planning, design, and implementation of a project.

The structure and general sequence of this EIAR follows the EPA Guidelines (2022). The process may be summarised succinctly as follows:

- Screening – Is an EIA required?
- Scoping – If EIA is required, what aspects of the Environment should be considered?
- Preparation of EIAR

The EIAR informs the EIA process being conducted by the Competent Authority (CA), which in this case is the EPA, as part of the WWDA process.

## 2.2. EIA Screening

This is a WWDL Review Application for a Waste Water Treatment Plant (WwTP) with a capacity of greater than 10,000 p.e as defined in Article 2, point (6), of the UWWTD. Therefore, a mandatory EIA, and the preparation of an EIAR is required for this Project to inform the WWDA process.

## 2.3. EIA Scoping Process

The scoping stage of an EIA is a process of determining the content and extent of the matters which should be covered in the environmental information to be assessed in the EIAR.

Nicholas O' Dwyer Ltd., on behalf of IW, prepared a Scoping Report describing the nature of the operational discharges from the Bandon agglomeration, the need for the project, and for each environmental factor as listed in the EIA Directive, the baseline environment, proposed assessment methodology and potential for likely significant effects.

On 12<sup>th</sup> September 2022, in accordance with Regulation 17C of the European Union (Waste Water Discharge) Regulations 2007, as amended, IW submitted an EIA Scoping Report to the EPA with a request for the Agency to provide its opinion in writing on the scope and level of detail of the information required to be included in the EIAR.

The Agency consulted with the below listed bodies on 13<sup>th</sup> September 2022:

- Minister for Agriculture, Food and the Marine;
- Inland Fisheries Ireland;
- Development Applications Unit (Department of Housing, Local Government and Heritage);
- An Taisce;
- Health Service Executive;
- Health and Safety Authority;
- Fáilte Ireland;
- An Bord Pleanála;
- Cork County Council (Planning Section and Environment Section);
- Marine Institute;
- Sea Fisheries Protection Authority;
- Bord Iascaigh Mhara; and
- Food Safety Authority of Ireland.

A summary of the comments and recommendations received from the agencies and organisations has been provided below.

*Table 2.1: Scoping Responses*

Consultee	Date of Response	Summary of Response	Acknowledgement of Response
Health Service Executive (HSE)	20/10/2022	<p>The HSE recommended that public consultation and the wider determinants of health and wellbeing are considered, including: Consideration of Alternatives; Population and Human Health; Hydrology and Hydrogeology; Noise and Vibration; Air and Climate; Odour; Land, Soils and Geology; and Ancillary Facilities.</p> <p>The HSE also referred to guidance documents to utilise when preparing the EIAR.</p>	The assessment contained herein has taken full regard of the HSE submission.
Inland Fisheries Ireland (IFI)	27/09/2022	<p>The IFI state that Bandon River is one of the premier angling, spawning and nursery waters in the South Western River Basin District and that <i>"the deterioration of the status of the Bandon River (Bandon_090) from 'Good' to 'Moderate' is naturally a cause for concern"</i>.</p> <p>The IFI also request that the current actual background data is applied for calculation of the assimilative capacity of the river.</p>	<p>The assessment contained herein has taken full regard of the IFI submission.</p> <p>It is acknowledged that the 2013-2018 WFD status of the Bandon_080 and Bandon_090 was Moderate status (2013-2018). However, it should be noted that the recently published 2016-2021 WFD status of the Bandon_080 and Bandon_090 is now Good status.</p> <p>The WAC calculations used to inform the Bandon WWDL review application and supporting documents, including this EIAR document, have been based on the EPA's notional clean river approach and the mean background concentrations upstream of the primary discharge (Station: RS20B020800 - data from January 2020 – May 2022).</p>
Sea Fisheries Protection Authority	14/09/2022	The consultee raised no topics for attention.	Noted

The scoping responses received, and the Scoping Opinion received from the EPA, as detailed in **Section 2.3.3** of the main EIAR document, were taken into consideration throughout the process of preparing this EIAR.

## 2.4. EIAR Structure

The composition of this EIAR is in accordance with EPA Guidelines (2022) which requires that information contained within an EIAR should be in accordance with the EIA Directive 2014/52/EU.

This EIAR has been prepared with consideration of the EPA's "*Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*" (May 2022), and the "*Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*", Department of Housing, Planning and Local Government (August 2018).

The overfall structure of the EIAR is as:

- Chapter 1 - Introduction
- Chapter 2 - The EIA Process
- Chapter 3 - Description of the Project and Site
- Chapter 4 - Policy & Legislative Context
- Chapter 5 - Biodiversity
- Chapter 6 - Water
- Chapter 7 - Population & Human Health
- Chapter 8 - Material Assets
- Chapter 9 - Traffic and Transportation
- Chapter 10 - Air Quality and Climate Change
- Chapter 11 - Noise and Vibration
- Chapter 12 - Odour
- Chapter 13 - Archaeology, Architectural and Cultural Heritage
- Chapter 14 - Lands, Soils and Geology
- Chapter 15 - Landscape & Visual
- Chapter 16 - Risk of Major Accidents and/or Disasters
- Chapter 17 - Interactions
- Chapter 18 - Schedule of Mitigation Measures
- Chapter 19 - Bibliography
- Chapter 20 - Abbreviations
- Appendix 1 - Criteria for Rating Site Attributes - Estimation of Importance of Hydrology Attributes
- Appendix 2 - Waste Assimilative Capacity Calculations
- Appendix 3 - Water Framework Directive Screening Assessment

## 3. DESCRIPTION OF PROJECT – OPERATIONAL DISCHARGES

**Chapter 1** of the EIAR provides full details on the background and a description of the existing Bandon WwTP and the upgrades to the WwTP and Network under the Bandon Sewerage Scheme, Bandon IDA Laragh WwTP Upgrade, and the Bandon Watermain & Sewer Network Project.

**Chapter 3, Section 3.3** of the EIAR provides details on the operational discharges of the Bandon agglomeration *i.e.*, the subject matter of this EIAR. A summary of the operational discharges is provided below.

### 3.1. Primary Discharge (SW001)

The primary discharge (SW001) from the WwTP will remain the same as it was prior to the Bandon Sewerage Scheme Upgrade and will continue to discharge to the River Bandon at NGR 150411E, 055785N.

The location of the Primary Discharge (SW001) is shown in **Table 3.1** and on **Figure 1.1** above.

### 3.2. Dual Function Overflow (SW002) at WwTP

There is a single Dual Function Overflow (SW002) at the Bandon WwTP *i.e.*, an overflow which can act as a SWO or as an Emergency Overflow (EO) depending on the event. The location of SW002 is shown in **Table 3.1** and on **Figure 1.1**.

This SWO has been designed to meet the definition of '*Storm Water Overflow*' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007, as amended and the criteria as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995. The following measures are also in place:

- A 900m<sup>3</sup> Stormwater Holding Tank is provided at the WwTP; flows in excess of the Stormwater Tanks capacity overflow to the River Bandon;
- Overflows from the Storm Water Holding Tank are screened before entering the River Bandon. This provides primary treatment in the event that effluent spills to the outfall;
- Provision of a SCADA and telemetry system, this system ensures compliance and compatibility with IW's Design Specifications;
- Provision of a standby power supply at the WwTP to provide for continued operation of the waste water treatment equipment in the event of an interruption in the power supply; and
- All flows will be monitored continuously and recorded by flowmeters at the WwTP.

### 3.3. Dual Function Overflow (SW004) at Watergate Street Pumping Station

There is a single Dual Function Overflow (SW004) at the Watergate Street Pumping Station. The location of SW004 is shown in **Table 3.1** and on **Figure 1.1**.

This SWO has been designed to meet the definition of '*Storm Water Overflow*' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007, as amended and the criteria as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995. The following measures are also in place:

- Storm water capacity provided in wastewater pump sump (total capacity of *ca.* 1,136l/s). Flows in excess of the total pump capacity discharge through 2 no. screened overflows to the adjacent storm sump. This provides primary treatment in the event that effluent spills to the outfall; and
- Alarms for pump and level at the Watergate Street Pumping Station with alarms sent to operators.

### 3.4. Storm Water Overflow (SW008) at Glasslinn Road

There is a single network Storm Water Overflow (SW008) along the Glasslinn Road. The location of SW008 is shown in **Table 3.1** and on **Figure 1.1**.

This SWO has been designed to meet the definition of '*Storm Water Overflow*' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007, as amended and the criteria as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995.

### 3.5. Storm Water Overflow (SW014) at N71 Road

There is a single network Storm Water Overflow (SW014) along the N71. The location of SW014 is shown in **Table 3.1** and on **Figure 1.1**.

This SWO has been designed to operate to meet the definition of '*Storm Water Overflow*' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007, as amended and the criteria as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995.

### 3.6. Dual Function Overflow (SW016) at Glasslinn Road Pumping Station

There is a single Dual Function Overflow (SW016) at the upgraded Glasslinn Road Pumping Station. The location of SW016 is shown in **Table 3.1** and on **Figure 1.1**.

This SWO has been designed to meet the definition of '*Storm Water Overflow*' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007, as amended and the criteria as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995. The following measures are also in place:

- Storm water storage capacity provided in wet well (250m<sup>3</sup>);
- Storm water flows up to a 1 in 5-year return period (1855l/s) are screened before entering the River Bandon. A 6mm solids separation screen with a minimum solids capture ratio of 80% (based on "Formula A" flow) is present. This provides primary treatment in the event that effluent spills to the outfall;
- Provision of a standby power supply at the Glasslinn Road Pumping Station to provide for continued operation of the pumping equipment in the event of an interruption in the power supply; and
- Alarms for pump and level at the Glasslinn Road Street Pumping Station with alarms sent to operators.

### 3.7. Dual Function Overflow (SW017) at Laragh Pumping Station

There is a single Dual Function Overflow (SW017) at the Laragh Pumping Station. The location of the SW017 is shown in **Table 3.1** and on **Figure 1.1**.

This SWO has been designed to meet the definition of '*Storm Water Overflow*' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007, as amended and the criteria as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995. The following measures are also in place:



- Storm water storage capacity provided in storm tanks (80m<sup>3</sup>). This provides a minimum of 24 hours future dry weather flow storage and up to 84 hours existing average flow storage. In the context of best practice, this volume of storage is considered an extra-large volume of storage for a pumping station;
- A 6mm solids separation screen with a minimum solids capture ratio of 80% (based on "Formula A" flow) is present. This provides primary treatment in the event that effluent spills to the outfall;
- Alarms for pump and level at the Laragh Pumping Station with alarms sent to operators; and
- Uninterruptible Power Supply for up to 30 minutes is provided for all instrumentation, controllers, alarms and data storage systems. This ensures that alarms are sent in the event of a loss of power.

### 3.8. Storm Water Overflow (SW018) at New Road

There is a single network Storm Water Overflow (SW018) along the New Road. The location of the SW008 is shown in **Table 3.1** and on **Figure 1.1**.

This SWO has been designed to meet the definition of 'Storm Water Overflow' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007, as amended and the criteria as set out in the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows', 1995.

### 3.9. Emergency Overflow (SW019) at Castlewoods Pumping Station

There is a single Emergency Overflow (SW019) at Castlewoods Pumping Station. The location of the SW019 is shown in **Table 3.1** and on **Figure 1.1**.

The EO will only activate should a catastrophic and highly unlikely event occur where there is a double failure mode at the Pumping Stations e.g., duty and stand-by pump fails and/or power outage fails. The following measures are also in place:

- Connection for a generator available at the Castlewoods Pumping Station to provide for continued operation of the pumping equipment in the event of an interruption in the power supply.

### 3.10. Dual Function Overflow (SW020) at Kilbrogan Pumping Station

There is a single Dual Function Overflow (SW020) at the Kilbrogan Pumping Station. The location of the SW020 is shown in **Table 3.1** and on **Figure 1.1**.

This SWO has been designed to meet the definition of 'Storm Water Overflow' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007, as amended and the criteria as set out in the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows', 1995. The following measures are also in place:

- Connection for a generator available at the Kilbrogan Pumping Station to provide for continued operation of the pumping equipment in the event of an interruption in the power supply.

Table 3.1 Operational Discharges Relating to Bandon WWDA Review

Discharge Name	Type	Asset	Discharge Location (NGR)
SW001	Primary Discharge	WwTP	150411E, 055785N
SW002	Dual Function Overflow (Storm Water Overflow & Emergency Overflow)	WwTP	150368E, 055690N
SW004	Dual Function Overflow (Storm Water Overflow & Emergency Overflow)	Watergate Street Pumping Station	149316E, 055104N
SW008	Storm Water Overflow	Network	149738E, 055164N
SW014	Storm Water Overflow	Network	148826E, 054484N
SW016	Dual Function Overflow (Storm Water Overflow & Emergency Overflow)	Glasslinn Road Pumping Station	150070E, 055290N
SW017	Dual Function Overflow (Storm Water Overflow & Emergency Overflow)	Laragh Pumping Station	145152E, 054669N
SW018	Storm Water Overflow	Network	149039E, 054717N
SW019	Emergency Overflow	Castlewoods Pumping Station	147749E, 053889N
SW020	Dual Function Overflow (Storm Water Overflow & Emergency Overflow)	Kilbrogan Pumping Station	148713E, 055617N

### 3.11. Waste Water Treatment Plant Design

Planning Permission for the Bandon Sewerage Scheme (Cork County Council planning ref: 174106) was obtained on the basis of the upgraded WwTP (14,456 p.e) meeting the ELVs as per Schedule A.1 of the WWDL D0136-01 (Tech Amendment A): BOD 25mg/l, COD 125mg/l, SS 35mg/l, pH 6-9 pH units, Orthophosphate as P 3mg/l and Ammonia 3mg/l.

Since planning was obtained, a Waste Assimilative Capacity (WAC) calculation based on the proposed primary discharge ELVs at DWF for 14,456 p.e was completed in 2022 to inform this WWDA Review Application and ensure that the above ELVs were fit for purpose based on the latest data available (see **Appendix 2** of main EIAR Document for a copy of the WAC). This calculation was used to examine the dilution and the capacity of the River Bandon to receive the treated discharge without impacting the waterbody. It was concluded that a more onerous Ortho-phosphate ELV of 1.6mg/l was required to meet the Good-status 95%ile Environmental Quality Standard (EQS) downstream of the primary discharge.

Based on the distance of Upper Bandon Estuary nutrient sensitive estuary (Phosphorus limited) downstream of the primary discharge point (ca. 5km), along with the fact that the p.e. of the agglomeration is greater than 10,000, a Total Phosphorus (TP) ELV of 2mg/l is being proposed.

Based on the proposed ELVs in **Table 3.2**, the receiving waterbody has the capacity to accommodate the discharge from the upgraded WwTP without causing a breach in the relevant standards as outlined in National and European legislation. This includes ensuring compliance with the Good standards set in the European Communities Environmental Objectives (Surface Water) Regulations, 2009, as amended (now S.I. No. 288 of 2022).

**Table 3.2** presents the proposed ELVs for the upgraded Bandon WwTP.

*Table 3.2 Proposed Emission Limit Values (ELVs)*

Parameter	Proposed Emission Limit Value (ELV)
Biological Oxygen Demand	25 mg/l
Chemical Oxygen Demand	125 mg/l
Suspended Solids	35 mg/l
Ortho-phosphate (as P)	1.6 mg/l
Ammonia (as N)	3 mg/l
Total Phosphorus	2 mg/l
pH	6 - 9

The Bandon Wastewater Treatment Works (WwTW) has been designed to ensure that emissions from the works will not result in the contravention of any relevant EU Directives and National Regulations in accordance with IW's Design Specifications.

### 3.12. Consideration of Alternatives

#### 3.12.1. "Do Nothing" Scenario

If the Bandon Sewerage Scheme works had not been implemented, it is possible that there would be inadequate treatment capacity within the WwTP to meet the future needs of the area served. This would result in ineffective management of the wastewater treatment process and risks to the environment and public health. It is therefore considered that the "Do-Nothing" scenario was not an option in relation to this aspect of the completed works.

In the absence of the Bandon IDA Laragh WwTP upgrade, which was completed in Q3 2018, the potential for highly polluted effluent discharges from the Industrial Estate would have continued. This may have resulted in a deterioration of water quality in the River Bandon at the discharge point.

If the Bandon Watermain and Sewer Network Project is not completed, the possibility of future flood events, like those currently being experienced in the town, will continue. Climate change is already resulting in more intense storms and rainfall events and an increased likelihood and magnitude of river and coastal flooding is predicted for the future. This will have economic and social impacts on businesses, residents, public infrastructure, and services that have been affected by previous flood events. Furthermore, in the absence of the Bandon Watermain and Sewer Network Project, frequent discharges of untreated waste water to the River Bandon during storm events would continue. It is therefore considered that the "Do-Nothing" scenario was not an option.

### 3.12.2. Alternative Locations

The upgrade works at Bandon WwTP were required to ensure that there would be adequate treatment capacity to meet the future needs of the area served. Bandon WwTP was deemed the most feasible option as the existing network gravitates to Glasslinn Road Pumping Station and then to the WwTP. The option of providing a separate treatment facility located elsewhere in the catchment would be less feasible and would also involve diversion of flows to a new facility for treatment as well as separation and pumping of network flows and land acquisition. Consideration of alternative locations is, therefore, not relevant to the Project.

## 4. BIODIVERSITY

**Chapter 5** of the EIAR, prepared by Thorne Ecology, provides an Ecological Impact Assessment (EcIA) of the Bandon agglomeration operational discharges.

The ecological receptors of the agglomeration and surrounding area of the operational discharges were informed by as desk study and a site visit conducted on the 13<sup>th</sup> September 2022. The assessment was completed with regard to the following guidance:

- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester. Version 1.2 - Updated April 2022.
- EPA (2022), Guidelines on the information to be contained in Environmental Impact Assessment Reports, EPA, May 2022.
- NRA (2009) Guidelines for the Assessment of Ecological Impacts of National Road Schemes Rev. 2, National Roads Authority ; and
- DHPLG (2018) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment. Department of Housing, Planning and Local Government.

The assessment focuses on Key Ecological Receptors (KERs) which were identified by determining the potential Zone of Influence (ZoI) of the operational discharges for each potential receptor, in the context of the scale and nature of the discharges. The ZoI varies for each ecological feature and their relative sensitivity to the operational discharges.

The Bandon River Special Area of Conservation (SAC) is located in the upper Bandon River catchment ca. 29km upstream of the primary discharge point. The SAC is designated for Vegetation of flowing waters, Alluvial forests, Freshwater Pearl Mussel and Brook Lamprey, under the Habitats Directive. The Bandon/Caha Margaritifera SAC catchment encompasses the tributaries upstream of the SAC section of the River. This site is of international value and is therefore considered to be a Key Ecological Receptor (KER). Full details of the assessment on European Sites including the Bandon River SAC are provided in a combined AA Screening and NIS Report prepared for the Bandon WWDL Review Application. Refer to **Attachment D.2.2** of the WWDA Review Application Documentation.

The river habitat of the River Bandon, in terms of its physical attributes and vegetation, while modified around Bandon town, is of high quality upstream and downstream of Bandon in reaches within the Zone of Influence (ZoI) of the operational discharges. The River Bandon habitat is therefore considered to be a KER of County Importance.

In terms of Nationally Designated Sites, the Bandon Valley Above Innishannon proposed Natural Heritage Area (pNHA) is located *ca.* 1.3km downstream of the primary discharge point and the Bandon Valley West of Bandon pNHA is located *ca.* 3km upstream of the primary discharge point. Sites designated as pNHAs are considered to have National value. As there is a potential impact pathway *via* the River Bandon to both of these pNHAs, these sites are considered to be KERs.

Several waterbirds, or birds that could be associated with the river environment, have been recorded from the study area. Notable species were the Annex I birds Kingfisher and Little Egret, protected under the EU Birds Directive, and the red-listed bird of conservation concern Black-headed Gull. Kingfisher, Little Egret and other waterbirds using the River Bandon could be sensitive to any eutrophication impacts affecting their ability to fish or forage and are considered to be a KER of Local Importance (Higher Value).

There are records of Otter throughout the River Bandon. This population is considered to be a KER of Local Importance (Higher Value).

The River Bandon, excluding the section through Bandon Town impacted by drainage works, contains excellent habitat for all life stages of brown trout and excellent spawning and nursery habitat for salmon, sea trout and lamprey species. Salmon, trout, lamprey, and eel are protected under the Fisheries Act (1959), as amended, with salmon and lamprey additionally protected under the Habitats Directive. These species would all be sensitive to eutrophication impacts. The salmon, trout, lamprey, and eel populations in the river are KER's evaluated as being of County Importance.

The River Bandon downstream of the agglomeration is not a designated Freshwater Pearl Mussel (FWPM) catchment under the European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations (2009), as amended. It should be noted however that FWPM are known from the Bandon River SAC further upstream of the agglomeration and there may be *ex-situ* populations downstream of the SAC, but upstream of Bandon. Connectivity to the Bandon operational discharges is indirectly established due to the role salmonid species play in the FWPM's life cycle during their upstream migration. On a precautionary basis, FWPM populations potentially present downstream of the SAC, but upstream of Bandon, are considered KER's of County Importance.

In terms of likely significant effects, the assessment in this Chapter mainly considers the KERs identified for the Project as listed above, *i.e.*, ecological receptors of local (higher) value and above. In the context of impacts, the assessment considers the nature of the effects that could arise and if mitigation is required.

The waste water discharge from the upgraded WwTP, considered in relation to background catchment pressures, meets all the relevant Surface Water Regulation Environmental Quality Standards (EQSs) for Good status. Biological water quality monitoring demonstrates that the river, in the context of the current operational discharges, achieves Good status, indicating no deterioration in the longer-term quality of the benthic fauna downstream. However, localised impacts of sewer overflows meant that these discharges were identified as a significant pressure on the river. The removal of 10 no. overflows and the improvements to the network will significantly reduce the volume and quality of intermittent discharges entering the river, addressing this localised pressure.

Good status conditions are sufficient to ensure that many pollution-sensitive aquatic species using the River Bandon, *e.g.*, salmonids, are not affected by the discharges. Consequently, any less sensitive species will also remain unaffected as nutrient input *via* treated effluent from the WwTP, or diluted intermittent discharges, into the Bandon River

system would not impact water quality at a scale that would significantly affect the health, habitat or food sources of these species. Bird and mammal fauna identified as KERs, such as Kingfisher and Otter, which may rely on the river and its aquatic fauna for habitat and food, will consequently also remain unimpacted by the discharges.

Freshwater Pearl Mussel outside the SAC, linked indirectly *via* the upstream migration of salmonids have no potential to be adversely affected as water quality conditions will not affect their host fish.

The 3<sup>rd</sup> cycle catchment assessment report highlights SWOs from the Bandon agglomeration as a significant pressure for the Bandon\_090 and Bandon\_100 waterbodies. The removal of 10 no. SWOs along with the proposed ELVs and the proposed design and operation of the overflows, will cause a reduction in overall nutrient input into the river system. Locally, this will have a slight positive long-term impact on the identified KERs, *i.e.*, the river habitat, aquatic fauna, including otter and birds that rely on the river, and together with the River Basin Management Plan (RBMP) measures tackling key pressures, this aspect of the Project will contribute towards the maintenance of Good status water quality conditions in the waterbody.

The operational discharges do not have the potential to negatively impact upon any of the habitats or fauna identified as KERs *i.e.*, the river habitat, aquatic fauna, otter or birds that rely on the river. The nearby pNHAs, which include the river habitat and its species considered herein, will also consequently remain unaffected. The AA Screening/NIS has demonstrated that the integrity of the SAC will not be affected.

As no likely significant negative effects to KERs have been identified, mitigation measures to avoid or reduce the potential impacts of the Project on KERs are therefore not required.

However, to ensure the continued satisfactory operation of the Bandon agglomeration in line with the discharge licence the author recommends the following, to:

- Ensure that the capacity of the WwTP is not exceeded;
- Ensure that all discharges continue to operate in compliance with the ELVs; and
- Continue monitoring the effluent and receiving waters, on a consistent and regular basis.

As no potential significant effects have been identified from the operational discharges from the Bandon agglomeration, and no mitigation measures prescribed, there are no residual significant effects.

No cumulative effects arising with any other plans or projects are predicted.

Monitoring of effluent and the receiving watercourse is specified by the EPA discharge licence. As specified in the licence, water quality will continue to be monitored to determine the impact of the discharge from the upgraded WwTP to ensure it complies with relevant legislation and the limits specified by the licence.

In conclusion, no significant negative effects upon KERs are predicted to arise from the operational discharges associated with the Bandon agglomeration. The resultant improvement in water quality of the River Bandon is predicted to have a slight positive long-term impact on the identified Key Environmental Receptors *i.e.*, the river habitat, aquatic sensitive water dependent fauna, otter, and birds that rely on the river.

## 5. WATER

This Chapter, prepared by AWN Consulting Ltd, assesses and evaluates the likely significant effects associated with the operational discharges on the water environment. An overarching component of this Chapter is assessing the impact of the operational discharges against the pertinent objectives of relevant Directives and Regulations, including but not limited to the Water Framework Directive (WFD) [2000/60/EC], UWWT Directive [91/271/EEC] European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended [S.I. No. 272 of 2009, S.I. No. 77 of 2019 & S.I. No. 288 of 2022].

A site-specific detailed WFD Screening Assessment was carried out for the operational discharges and is attached to the EIAR as **Appendix 3 – Water Framework Directive Screening Assessment**. The WFD Screening Assessment has shown that there is no potential for change in the water body status and risk as a result of the operational discharges.

All operational discharges (with the exception of SW017) enter the Bandon\_090 waterbody which has a WFD 2016-2021 designation of Good status. SW017 enters the Bandon\_080 which also has a WFD 2016-2021 designation of Good status. For both waterbody this is an improvement from the 2013-2018 WFD designation of Moderate status.

There are no significant pressures identified for the Bandon\_080. Significant pressures for the Bandon\_090 have been determined, within the draft 3<sup>rd</sup> cycle Catchment Report, as domestic waste water, other unknown anthropogenic pressures, urban run-off and urban waste water.

The removal of 10 no. SWOs and the proposed more onerous ELV for Ortho-phosphate, and the proposed design and operation of the overflows, will result in a reduction in overall nutrient input into the river system. Given the proposed stringent ELVs and the network upgrades, the operational discharges will support the appropriate water chemistry conditions and will therefore not hinder the maintenance of 'Good Status' under the WFD.

The removal of 10 no. overflows and the improvements to the network will significantly reduce the volume and improve the quality of intermittent discharges entering the river, addressing any localised impacts.

No significant negative effects to the water environment have been identified. Mitigation measures to avoid or reduce the potential impacts of the Project on the water environment are therefore not required.

In terms of residual impacts, it is concluded that there will be no degradation of the current water body status (either chemically, ecologically, or quantitatively) or its potential to meet the requirements and/or objectives and measures in the second [current] RBMP and draft third RBMP 2022-2027. It is reiterated that the Bandon agglomeration, prior to upgrades being completed, was listed as a pressure on its receiving waterbody. The primary discharge (SW001) will be adequately treated within the WwTP. This, along with the proposed more stringent ELV for Ortho-phosphate, and the inclusion of a TP ELV, will have a slight long-term positive impact to the WFD water quality status of the receiving watercourse.

During storm conditions, any discharges from SWOs will be diluted, settled, and screened prior to being discharged. The stormwater will enter the river which will itself have increased flows driven by sustained rainfall. In this context, the discharges *via* the SWOs to the large River Bandon channel will be diluted and dispersed effectively and will have

no-long-term negative impact to the WFD water quality status of the receiving watercourse.

In terms of EOs, while a theoretical risk (as the failure of any infrastructure in catastrophic situations is theoretically possible), they are not reasonably predicted to occur. Should they occur however, these overflows will be temporary (short-lived) and have no long-term negative impact on the waterbody quality.

In summary, no potential significant negative effects have been identified from the operational discharges from the Bandon agglomeration. However, locally there will be a slight positive, long-term effect for the reasons as outlined above.

There are no cumulative impacts with other plans and projects predicted.

Monitoring of effluent and the receiving watercourse is specified by the EPA discharge licence. As specified in the licence, water quality will continue to be monitored to determine the impact of the discharge from the upgraded WwTP to ensure it complies with relevant legislation and the limits specified by the licence.

Overall, no negative effects on the water environment are predicted to arise from the operational discharges associated with the Bandon agglomeration. It is predicted that there will be a slight positive long-term effect on the receiving waterbody, *i.e.*, River Bandon, and the operational discharges will not contravene the objectives of the WFD [2000/60/EC], UWWT Directive [91/271/EEC] and European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended [S.I. No. 272 of 2009, S.I. No. 77 of 2019 & S.I No. 288 of 2022].

## 6. POPULATION & HUMAN HEALTH

**Chapter 7** of the EIAR was prepared by Enviroguide Consulting and is concerned with the likely significant effects of operational discharges on human beings, living, working, and visiting in the vicinity of the Bandon agglomeration. This Chapter details the potential direct and indirect effects of the discharges on Population and Human Health. It includes an overview of the socio-economic climate of Bandon and County Cork focusing on pertinent issues such as residential amenity, economic activity, tourism, and population levels.

In terms of the likely significant effect on Human Health and Safety, it is considered that there will be a slight, positive, long-term impact on human health, as the potential human health risks from the discharge of untreated wastewater from overflows will be reduced as a result of the Project. The increase in the volume of wastewater receiving treatment at the Bandon WwTP will contribute to protecting the local environment and public health.

In terms of the likely significant effect on Water Quality & Population, the improvement in water quality will reduce the potential for impacts from water related health risks. Thus, a slight, positive, long-term impact is expected on the population of Bandon due to the improved water quality resulting from the Project.

In terms of the likely significant effect on Socio Economics, as per the current situation, it is proposed that approximately 1-2 people will continue to be employed during the operational phase of the Project having a neutral impact on the local economy and employment.

Noise has been assessed in **Chapter 11** and this Chapter concluded that the operational discharges will not have a significant impact in relation to Noise and Vibration. As such there will be no significant impact on human health as a result of noise.



Potential odour effects have been assessed in **Chapter 12** of this EIAR whereby it was concluded that there will be no significant Odour impact as a result of the operational discharges and as such there will be no significant impact on Population and Human Health in relation to odour.

As a result of the above, no specific mitigation measures are required in relation to Population and Human Health, given the lack of direct effects resulting from the Bandon agglomeration operational discharges. However, it is noted that all workers employed with the Project will comply in full with the relevant HSE guidelines and any Government protocols that may be in place at that point in time in relation to COVID-19.

No negative residual impacts in the context of Population and Human Health are anticipated regarding the operational discharges from the Bandon agglomeration. A slight positive impact on population and human health was identified as a result of water quality improvement. The upgraded WwTP will also allow for future development to take place in the town of Bandon and depending on the nature of the development this could have a positive effect on population and human health in the form of socio-economic improvements, community amenities or residential developments to supply housing.

There are no cumulative impacts with other plans and projects predicted.

In terms of Monitoring, **Section 3.5.3** of the EIAR main document has detailed general "*Measures to Prevent Unintended Discharge*".

The monitoring regime to be carried out in relation to other environmental factors, such as ecology and water will be sufficient to inform population and human health factors. No specific monitoring measures are required in relation to Population and Human Health, given the lack of direct effects resulting from the operational discharges.

## 7. MATERIAL ASSETS

**Chapter 8** of the EIAR was prepared by Enviroguide Consulting and is concerned with the likely significant effects of operational discharges on relevant Material Assets of the Bandon agglomeration.

No protected views, rights of way or planned pieces of strategic infrastructure or any important tourist sites will be affected in any way by the Bandon agglomeration operational discharges.

Based on the subject matter of this EIAR, it is considered that there will be no significant long-term impacts on the built services and infrastructure (*e.g.*, surface water drainage, water supply, power, information and communications technology, waste management) as a result of Bandon agglomeration operational discharges.

In the absence of potential negative significant effects, no mitigation is required.

There are no residual impacts or cumulative impacts with other projects or plans predicted.

No specific monitoring measures are required, given the lack of direct effects resulting from the operational discharges.

In summary, due to their nature, no significant Material Assets impacts are predicted from the operational discharges.

## 8. TRAFFIC & TRANSPORT

**Chapter 9** of the EIAR was prepared by Nicholas O'Dwyer Ltd. and is concerned with the likely significant effects of the Bandon agglomeration operational discharges on Traffic and Transportation.

Given that the WwTP and Pumping Stations are already in operation, there will be no significant change to traffic movements on the existing network or to the existing access arrangements during their operation. The operational discharges in themselves do not generate any traffic movements.

In the absence of potential negative significant effects on the transport network and traffic itself, there is no scope for mitigation.

There are no residual impacts or cumulative impacts with other projects or plans predicted.

No specific monitoring measures are required, given the lack of direct effects resulting from the operational discharges.

In summary, due to their nature, no significant Traffic and Transportation impacts are predicted from the operational discharges.

## 9. AIR QUALITY & CLIMATE

**Chapter 10** of the EIAR prepared by Awn Consulting Ltd. is concerned with the likely significant effects of the Bandon agglomeration operational discharges on Air Quality and Climate.

In terms of Air Quality, due to the nature of the operational discharges, there will be no air quality emissions to atmosphere associated with the discharges. Therefore, there is no predicted impact to Air Quality under normal operations.

The development will allow for an EO from the WwTP (SW002). Provision for a permanent back-up generator ensures power to the WwTP in the event of an interruption in the power supply to the site. Similarly, there is the provision for a standby power supply at Glasslinn Road Pumping Station (SW016). A connection for a generator is also available at the Castlewoods Pumping Station (SW019) and Kilbrogan Pumping Station (SW020). There will be some emissions to atmosphere in relation to the back-up generators in the form of NO<sub>2</sub>, PM and CO emissions. However, emissions from the generators will have an imperceptible impact on local air quality due to the small number required (1 no. at each of the aforementioned Pumping Stations) and they will only be required for use during emergency events, which will be a very rare occurrence. It is therefore concluded that the Project will have an imperceptible impact on Air Quality.

In terms of Climate, there will be no GHG emissions associated with the operational discharges themselves. Therefore, there is no predicted impact to climate during normal operations.

Emissions of CO<sub>2</sub> from the back-up generators associated with the WwTP and Glasslinn Road Pumping Station are not predicted to have any significant impact to Climate. Similarly, emissions of CO<sub>2</sub> from the generators which may be connected at the Castlewoods Pumping Station and Kilbrogan Pumping Station, are not predicted to have any significant impact to climate. These generators will be required for use in emergency events only, which will be a very rare occurrence. Therefore, CO<sub>2</sub> emissions when compared to emissions targets will be imperceptible.

In the absence of potential negative significant effects, no mitigation is required.

There are no residual impacts or cumulative impacts with other projects or plans predicted.

No specific monitoring measures are required, given the lack of direct effects resulting from the operational discharges.

In summary, due to their nature, no significant Air Quality and Climate impacts are predicted from the operational discharges.

## 10. NOISE & VIBRATION

**Chapter 11** of the EIAR, prepared by AONA Environmental Consulting Ltd. is concerned with the likely significant effects of the Bandon agglomeration operational discharges on Noise and Vibration. This includes a brief overview of the proximity of the nearest residential properties to the operational discharges and an assessment of potential noise impacts.

The operational discharges will be completely inaudible, other than the sound of the flow of the primary effluent/storm water, which is akin to the sound of the existing flows in the River Bandon. Therefore, the noise and vibration impact from the operational discharges will be negligible.

Noise emissions from back-up generators are not predicted to have any significant noise impacts. The generators will be required to be used in emergency events only, when there is an interruption to the power supply for the WwTP, Glasslinn Road Pumping Station, Castlewoods Pumping Station, or Kilbrogan Pumping Station, which will be a very rare occurrence. If the generators were required to provide power supply, their use would be expected to last a maximum of a few hours. The impact is therefore considered to be negligible.

Otherwise, occasional noise impacts may occur during maintenance of the outfall which may include occasional operation of plant and equipment to remove trapped detritus from the discharge points. It is expected that while such maintenance works may generate short-term periods with audible noise levels in the surrounding proximity, it would be expected that such maintenance works would last a maximum of a few hours and may only occur once or twice a year during the daytime period. The impact of these activities is therefore considered to be negligible.

In the absence of potential negative significant effects, no mitigation is required.

There are no residual impacts or cumulative impacts with other projects or plans predicted.

No specific monitoring measures are required, given the lack of direct effects resulting from the operational discharges.

In summary, due to their nature, no significant Noise & Vibration impacts are predicted from the operational discharges.

## 11. ODOUR

**Chapter 12** of the EIAR, prepared by AWN Consulting Ltd, is concerned with the likely significant effects of the Bandon agglomeration operational discharges on Odour.

The primary discharge, SW001, will be treated prior to release thereby minimising the potential for odour. In terms of SWOs, a SWO event will lead to a highly diluted screened effluent being discharged to the River Bandon. In this context, the SWO discharges will

not be odorous. Any odours associated with the primary discharge and a SWO event are expected to be imperceptible.

Should an EO be activated, the overflow event will be short (few hours) in duration, and it is considered that odours associated with such an event will be imperceptible.

In the absence of potential negative significant effects, no mitigation is required.

There are no residual impacts or cumulative impacts with other projects or plans predicted.

No specific monitoring measures are required, given the lack of direct effects resulting from the operational discharges.

In summary, due to their nature, no significant Odour impacts are predicted from the operational discharges.

## 12. ARCHAEOLOGY, ARCHITECTURAL & CULTURAL HERITAGE

**Chapter 13** of the EIAR, prepared by Courtney Deery Archaeological Consultants, is concerned with the likely significant effects of the Bandon agglomeration operational discharges on Archaeology, Architectural & Cultural Heritage.

The operational discharges will take place within the existing and newly improved built infrastructure as a result of the previously listed improvement works within the Bandon agglomeration. Due to the nature of the Project *i.e.*, operational discharges, no physical impacts are anticipated on Archaeology, Architectural & Cultural Heritage assets.

In the absence of potential negative significant effects, no mitigation is required.

There are no residual impacts or cumulative impacts with other projects or plans predicted.

No specific monitoring measures are required, given the lack of direct effects resulting from the operational discharges.

In summary, due to their nature, no significant Archaeology, Architectural & Cultural Heritage impacts are predicted from the operational discharges.

## 13. LAND, SOILS & GEOLOGY

**Chapter 14** of the EIAR, prepared by AWN Consulting Ltd, is concerned with the likely significant effects of the Bandon agglomeration operational discharges on Land, Soils and Geology, including Hydrogeology.

There are no sensitive soil receptors, and no identified areas of geological heritage or groundwater supplies in the vicinity of the Project.

A site-specific WFD Screening Assessment was carried out for the operational discharges and is attached as **Appendix 3 - Water Framework Directive Screening Assessment** of the main EIAR document.

Overall, this WFD Screening Assessment has shown that there is no potential for change in the groundwater water body status, and no risk as a result of the operational discharges.

Due to the nature of the operational discharges, no potential impacts to the land, soil, geological or hydrogeological environment were identified as there is no discharge to ground or active dewatering associated with the discharges.

It can be concluded that the Bandon agglomeration operational discharges, will have an imperceptible impact on Land, Soil, and the Geological and Hydrogeological environment.

In the absence of potential negative significant effects, no mitigation is required.

There are no residual impacts or cumulative impacts with other projects or plans predicted.

No specific monitoring measures are required, given the lack of direct effects resulting from the operational discharges.

In summary, due to their nature, no significant Land, Soils and Geology, including Hydrogeology impacts are predicted from the operational discharges.

## 14. LANDSCAPE AND VISUAL

**Chapter 14** of the EIAR, prepared by Stephenson Halliday Ltd, is concerned with the likely significant effects of the Bandon agglomeration operational discharges on Landscape and Visual factors.

The Cork County Draft Landscape Strategy identifies the study area relating to the operational discharges as Landscape Character Area (LCA) 6a: Broad Fertile Lowland Valleys. LCA 6a is deemed to be of County importance and to have a generally high sensitivity and high value. It is noted that the operational discharge points are contained within urban or peri-urban environments and do not impinge to any great extent on the surrounding countryside.

The strategy makes the following recommendation relevant to the Project:

- *Protect and preserve the Lee Valley and the Bandon River and their surrounding floodplains as unique landscape features in this Landscape Character Type and as valuable resource for scenic and amenity values.*

All discharge points, with the exception of SW016 and SW018, use the previously existing overflows. SW016 is a new outfall within very close vicinity to the previous outfall and any changes to location and form are minimal in nature. SW018 is a new outfall albeit any changes would be perceived as very limited in scale and extent.

Three of the discharge points (SW001, SW002 and SW016) are located along the route of the N71 National Secondary Road between Bandon and Inishannon which is designated as part of the County's network of scenic routes (S64).

In terms of Landscape, there are no changes to the existing landscapes in terms of vegetation removal or changes to topography and the infrastructure is of a very similar scale and nature to that of any previous structures. All but one of the discharge points were already present at or very near the current locations hence there is no significant change to land use. It is therefore considered that the existing landscape would be tolerant to the infrastructure type.

Overall, it is considered that any changes to LCA 6a would be of such small scale and limited extents such that they would be barely perceptible at a landscape scale, hence it is considered that landscape effects would not be greater than negligible. It is also therefore concluded that the scenic resource of the River Bandon would be retained intact. The changes as a result of the new SW018 outfall would be perceived from within a busy townscape setting and would be of very limited scale and extent and effects would again not be greater than negligible.

In terms of the Visual aspect, views of the majority of the operational discharge points are predominantly screened by existing topography, built form and vegetation and where they are present there would be little or no change to views. There is potential for discharge points SW004, SW014 and SW018 to be viewed from within the townscape of Bandon.

SW004 and SW014 have retained their previous locations and form and there would be no changes in views, whilst the latter would barely be perceptible to road and footway users due to the very limited scale and extent of changes. The discharge points with potential visibility to users of the N71 road are all screened by existing topography and vegetation. There would therefore be no changes to the visual amenity of users of the N71 road. Overall, it is considered that any potential changes to visual amenity would be of such small scale and limited extents that they would be barely perceptible. It is thus considered that visual effects would not be greater than negligible.

In the absence of potential negative significant effects, no mitigation is required.

There are no residual impacts or cumulative impacts with other projects or plans predicted.

No specific monitoring measures are required, given the lack of direct effects resulting from the operational discharges.

In summary, due to their nature, no significant Landscape and Visual impacts are predicted from the operational discharges.

## **15. RISK OF MAJOR ACCIDENTS AND/OR DISASTERS**

**Chapter 16** has been prepared by Nicholas O'Dwyer Ltd. and presents a consideration of risk of major accidents and/or disasters relevant to the Bandon agglomeration operational discharges, as required in the EIA Directive, and as described in the EPA's EIAR 2022 Guidelines.

Risks were identified through a review of the EIAR environmental factor Chapters and consultation with experts, as required. As set out in the EU guidance document, risks are identified both in respect of (i) the potential vulnerability of the Project (in this case in the context of the operational discharges) to major accidents and disasters; and (ii) the potential for the Project to cause accidents and/or disasters.

Moderate risks were identified with respect to potential clogging of inlet screens without the design mechanisms in place (which would alert the system and divert the discharge to the holding tank until the screens were unclogged). Potential damage to the biological treatment process as a result of an event whereby highly concentrated toxic influent is sent to the WwTP was also identified as a moderate risk given that it is unlikely but with potentially serious consequences. A fire or explosion is unlikely, but effects could result in damage to the WwTP, as well as potential contamination of the watercourse unless runoff is contained. Potential flooding will result in a limited consequence as dilution of any untreated discharge will limit the effect from contamination, with effects of a short duration.

It was concluded that the resultant risk level for the potential events from the WwTW relating to operational discharges are considered to be low with all mitigation and design measures in place. These measures are already an integral part of the operational design.

IW will regularly assess the risk of major accidents and/or disasters.

## **16. INTERACTIONS**

This Chapter of the EIAR has been prepared by Nicholas O'Dwyer Ltd. and considers the potential for interactions and inter-relationships between the factors of the environment, that have been examined individually throughout this EIAR, which could result in an impact being either positive or negative, as well as having varying levels of significance.

Biodiversity, Water and Population & Human Health are the factors identified where interaction of effects may occur as a result of the operational discharges, as summarised below.

Table 16.1 Interactive Effects of The Operational Discharges

Operational Discharge	Environmental Factors	Summary of Effect	Further Information
SW001	Water Biodiversity Population & Human Health	<p>The primary discharge standards will not compromise the achievement of the objectives and EQSs established for any European sites water dependant species and natural habitats and designations (e.g., Bandon River SAC) in the wider environs or downstream of the agglomeration.</p> <p>The operation of the upgraded WwTP, and network, is expected to have a positive impact in terms of a reduction in the levels of nutrients being discharged in the River Bandon. The discharge activities will not cause a deterioration in the chemical status of the River Bandon.</p> <p>Improvements to water quality will have a positive impact on water based recreational activities and amenity.</p> <p>The overall Risk of the Bandon WwTP to the downstream Innishannon Drinking Abstraction is classified as a Low Risk given the high dilution factor available in the receiving water and the design and operation of the upgraded WwTP.</p>	Slight positive, long-term effect. Refer to <b>Chapters 5, 6 and 7.</b>
SW002 SW004 SW008 SW014 SW016 SW017 SW018 SW019 SW020	Water Biodiversity Population & Human Health	<p>Elimination in so far as possible of unintended discharges from the agglomeration.</p> <p>The Dual Function Overflows and their operational design will not compromise the achievement of the objectives and EQSs established for any European sites water dependant species and natural habitats and designations (e.g., Bandon River SAC) in the wider environs or downstream of the agglomeration.</p> <p>The risks of sewer or outfall failure associated with extreme events resulting in the activation of EOs, while a theoretical risk (as the failure of any infrastructure in catastrophic</p>	Slight positive, long-term effect. Refer to <b>Chapters 5, 6 and 7.</b>

Operational Discharge	Environmental Factors	Summary of Effect	Further Information
		<p>situations is theoretically possible), is not reasonably predicted to occur. All appropriate design measures and mitigation to prevent EOs that can be applied has been incorporated in the design and operation of the discharges.</p> <p>The overall Risk of the Bandon WwTW to the downstream Innishannon Drinking Abstraction is classified as a Low Risk given the high dilution factor available in the receiving water and the design and operation of the upgraded works.</p> <p>Potential improvements to water quality and improved opportunities for water based recreational activities and amenity.</p>	

## 17. SCHEDULE OF MITIGATION MEASURES

Following an examination, analysis, and evaluation of the direct and indirect effects of the Bandon operational discharges in each Chapter of the EIAR, it was determined that the operational discharges would have no likely significant negative effects on any environmental factors. Therefore, no mitigation measures are required.

However, to ensure the satisfactory operation of the Bandon WwTW in line with the current WWDL D0136-01, and any future reviewed licence requirements, the authors of this EIAR have put forward the following recommendations to be implemented:

- Ensure that the design capacity (14,456 p.e.) of the WwTP is not exceeded.
- All flows will be monitored continuously and recorded by flowmeters at the upgraded Bandon WwTP.
- Ensure the primary discharge is compliant with its proposed/recommended ELVs.
- Monitor the effluent discharge and ambient water quality as per Schedule A: *Discharges & Discharge Monitoring*, and Schedule B: *Ambient Monitoring of the WWDL*.
- All workers attending the WwTP and associated Pumping Stations will comply in full with the relevant HSE guidelines and any Government protocols that may be in place at that point in time in relation to COVID-19.

## 18. NEXT STEPS

The findings of the EIA process to date are fully documented in the EIAR accompanying the Bandon WWDL D0136-01 Review Application.

A copy of –

- (i) The application for a waste water discharge licence



- (ii) The Environmental Impact Assessment Report (EIAR) and Natura impact Statement (NIS)
- (iii) Such further information relating to the application as may be furnished to the EPA in the course of the Agency's consideration of the application

will, as soon as is practicable after receipt by the Agency of the application, be available for inspection or purchase at a fee not exceeding the reasonable cost of making a copy at the headquarters of the Environmental Protection Agency, P.O. Box 3000, Johnstown Castle Estate, Co. Wexford; at Irish Water, Colvill House, 24-26 Talbot Street, Dublin 1 and at Cork County Council, County Hall, Carrigrohane Rd, Cork.

Submissions in relation to Bandon Waste Water Discharge Licence (WWDL) D0136-01 Review Application may be made to the EPA at its headquarters at P.O. Box 3000, Johnstown Castle Estate, Co. Wexford, in writing within the period of 5 weeks beginning on the date of receipt by the EPA of the application.