

ATTACHMENT A.1 - NON-TECHNICAL SUMMARY

1 INTRODUCTION

The proposed upgrade works will be located at the existing waste water treatment plant (WWTP) in Macroom, which is located approximately 30km west of Cork City as shown in Figure 1-1

Macroom WWTP is situated on the north-east edge of the town of Macroom. The WWTP is situated approximately 20m from the south-west bank of the River Sullane (IE_SW_19S020480), which flows through the centre of the town and which is a tributary of the River Lee. This section of the river is part of the Water Framework Directive (WFD) Sub-catchment Sullane_SC_010.

The River Sullane, which provides drinking water (and occasionally floods), joins the River Launa 1km east of the town, before joining the River Lee a further 1km east. It is also located 1.7km north of the Gearagh SAC (000108) and the Gearagh SPA (004109). The River Lee forms part of the Gearagh SAC (000108) and the Gearagh SPA (004109).

The WWTP is accessed directly off the Saint Colman’s Park residential development public road. The WWTP site comprises areas of amenity grassland, planted trees and a concrete access road. The area towards the back of the site, which is utilised by the Roads Dept. of Cork County Council, comprises a stoned surface (Clause 804 or similar material). The Roads Dept also utilise an area immediately inside the entrance gate consisting of 3 No. sheds & a container and following completion of the works, it is proposed that a portion of this area will be retained for use by the Roads Dept.



Figure 1-1: Site Location Map

2 NEED FOR THE DEVELOPMENT

The existing Macroom WWTP has a design capacity of 6,000 Population Equivalent (PE). The existing Macroom Sewerage Scheme consists mainly of a combined collection network. Flows from the east of the catchment gravitate directly to the existing Macroom WWTP, while flows from the west gravitate to Masseytown Pumping Station (PS) where they are pumped east to a high point, from which they gravitate to the WWTP. There are a further 4 No. PS on the network which service residential developments.

The existing Macroom WWTP includes the following treatment stages:

- Storm flow separation chamber using high level weir, with Storm Water Overflow (SW002) flowing to the Sullane River via the Primary Treated Effluent Outfall (Co-ords 134957E, 72953N);
- Preliminary treatment, consisting of a single 6mm automatic screen with a high-level bypass and 30mm manually raked screen downstream of the fine screen;
- Secondary treatment, consisting in the following:
 - Biological treatment: 1,240m³, 1.5m deep, single oxidation ditch fitted with 3no. vortex aerators and 1no. original surface aerator;
 - Secondary settlement: single 15.2m diameter settlement tank with half bridge scraper;
- Ferric sulphate IBC dosing chemical at the outlet of the inlet works, currently not operational;
- Sludge treatment
 - 26.5m³ sludge holding/thickening tank;
 - Sludge dewatering provided by a single screw press with a capacity of 650kg/d and ancillary polymer make-up unit.

Following treatment, the secondary treated effluent from the WWTP is discharged by gravity to the Sullane river (which borders the WWTP site) through a 20m long outfall (SW001) (Co-ords 134957E, 72953N).

The emission limit values (ELVs) which are set out in the existing waste water discharge licence (WWDL) D0126-01 are as follows:

Parameter	Unit	ELV
pH	pH units	6 – 9
Biological Oxygen Demand (cBOD)	mg/l	15
Chemical Oxygen Demand (COD)	mg/l	125
Suspended Solids	mg/l	25
Ammonia (as N)	mg/l	2
Orthophosphate (as P)	mg/l	1

Table 2-1 Existing WWDL D0126-01 ELV's

In its current design capacity (6,000 PE), the WWTP is unable to achieve the above ELVs. The existing WWTP is hydraulically overloaded and not fit-for purpose, resulting in failure to meet the above ELV requirements in recent years. Consequently, an upgrade of the treatment process is required.

Additionally, the site suffers from flooding issues. At present, the site of the WWTP experiences localised flooding from the River Sullane at least twice a year. In order mitigate the risk of flooding of the proposed development, it is proposed to construct a flood wall around the perimeter of the site.

The purpose of the proposed upgrade works are to cater for the future agglomeration load (8,300 PE), to ensure compliance with WWDL D0126-01 and to remediate to the existing flooding issues.

The primary legislative and regulatory drivers for the delivery of this project are as follows:

- Urban Waste Water Treatment Regulations, 2001;
- Wastewater Discharge Regulations, 2007 – 2020;
- Environmental Objectives (Surface Waters) Regulations, 2009.

3 PROPOSED UPGRADE WORKS

The proposed upgrade works at the existing Macroom WWTP are necessary to achieve the required treatment capacity and target ELV's. As referenced previously, the existing WWTP has a design capacity of 6,000 PE. As part of the upgrade works, it is proposed to increase the capacity of the WwTP to cater for the 25 year design projections as follows:

- 25-year Design Projection: 8,300 PE.

A Waste Assimilative Capacity (WAC) Assessment was carried out which, based on the above referenced design projections, determined that the River Sullane has sufficient assimilative capacity to accommodate the discharge from the upgraded WwTP at the following proposed ELVs:

Parameter	Unit	ELV
pH	pH units	6 – 9
Biological Oxygen Demand (cBOD)	mg/l	25
Chemical Oxygen Demand (COD)	mg/l	125
Suspended Solids	mg/l	25
Ammonia (as N)	mg/l	1.7
Orthophosphate (as P)	mg/l	0.8

Table 3-1 Proposed WWDL D0126-01 ELV's

The proposed upgrade works will comprise of the following:

- Preliminary treatment:
 - Upgrade and replacement of the existing storm water overflow (SWO) immediately upstream of the inlet works with new screened Dual SWO & EO (SW002);
 - Decommissioning of the existing preliminary treatment works including the screen;
 - Construction of a new inlet works and screening system;
 - Construction of a new grit removal system;
 - Construction of a new full flow to treatment (FFT) pumping station; and
 - Construction of a new stormwater storage tank equipped with storm water pumps.
- Secondary treatment:
 - Decommissioning of the existing oxidation ditch;
 - Construction of a new flow splitting chamber;
 - Construction of 2 No new integrated fixed-film activated sludge (IFAS) reactor tanks (Aeration Tanks);
 - Decommissioning of the existing final settlement tank;
 - Construction of 2 No. new final settlement tanks;
 - Construction of both return & waste activated sludge (RAS/WAS) pumping stations,
 - Installation of a lime batching & dosing facility, and;
 - Installation of ferric sulphate dosing system including bunded chemical storage tank.
- Sludge management system:
 - Decommission existing sludge holding tank;
 - Construction of a new sludge picket fence thickener (PFT);
 - Construction of an odour control system;
 - Installation of a new polymer make-up system, to be located within the existing building which is to be retained;
 - Decommissioning of the existing dewatering equipment within the existing building; and
 - Installation of a new sludge dewatering equipment/system (to be installed within the existing building, which is to be retained).

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- Outfall:
 - Construction of a new final effluent sampling manhole on the existing outfall pipeline, within the WWTP site;
 - Discharge of final effluent through the existing outfall to the River Sullane – SW001 (Co-ords 134957E, 72953N).
 - Ancillary works:
 - Construction of a solar PV panel installation capable of a maximum power generation of 42.32kWp;
 - Construction of a new sheetpile flood protection wall. This wall is to be constructed within the site boundary to a level of 300mm above the 0.1% Annual Exceedance Probability (AEP) (1-in-1000 year) flood level;
 - New standby energy generator & bunded fuel tank;
 - Relocation of the existing shed from the southern side of the WWTP site to the northern side of the WWTP site;
 - Demolition of existing sheds adjacent to the site entrance to create a designated area with a separate site entrance to be used by Cork County Council Roads Department;
 - Construction of a new control and administration building,;
 - Construction of new surface water drainage system with oil interceptor and attenuation system, in accordance with Sustainable Drainage Systems (SuDS); and
 - Site landscaping and finishes.

A planning application was submitted to Cork County Council for the proposed development in March 2022 (Ref 224630) and planning was granted in May 2023. A copy of the grant of planning permission & and the Planners Reports are attached in Attachment B.3.2.1, B.3.2.2 & B.3.3.3 of this WWDL review application.

4 DESCRIPTION OF THE FEATURES AND MEASURES, IF ANY, ENVISAGED TO AVOID, PREVENT, OR REDUCE AND, IF POSSIBLE, OFFSET THE SIGNIFICANT ADVERSE EFFECTS ON THE ENVIRONMENT

Uisce Eireann is committed to ensuring that water services infrastructure operates in a manner that supports the achievement of the water body objectives under the Water Framework Directive as well as obligations under the Birds and Habitats Directives.

The new WWTP has been designed to cater for an organic load of 8,300PE. Secondary treatment will be provided to ensure that the treated effluent discharge does not have a significant adverse effect on the receiving aquatic environment and that all relevant legislative requirements are complied with.

A WAC Assessment Report (Attachment D.2.1) was carried out which, based on the above referenced design projections, determined that the River Sullane has sufficient assimilative capacity to accommodate the discharge from the upgraded WwTP.

5 THE PROPOSED TECHNOLOGY AND OTHER TECHNIQUES FOR PREVENTING OR, WHERE THIS IS NOT POSSIBLE, REDUCING DISCHARGES FROM THE WASTE WATER WORKS

The WWTP upgrade is designed to meet both the discharge quality standards set out in Urban Waste Water Treatment Regulations (UWWTR) and to ELVs proposed above for the receiving body to meet its objectives under the Surface Water Regulations (2009) as amended by the Surface Water Regulations (2015).

The WWTP will be operated to ensure the primary discharge of treated effluent does not cause a significant adverse effect on the receiving environment i.e. the River Sullane.

6 DESCRIPTION OF THE RECEIVING WATERBODY

6.1 Description of Receiving Waterbody

The Macroom WWTP discharges to the River Sullane (IE_SW_19S020480). The river originates in County Kerry near the village of Cúil Aodha. The river flows eastwards through the centre of Macroom town and is a tributary of the River Lee. This section of the river which the WWTP discharges is part of the WFD Sub-catchment Sullane_SC_010.

The River Sullane, provides drinking water to the Macroom WTP. The abstraction point is located circa 2.2km upstream of the Primary Discharge Point SW001 from the Macroom WWTP.

The River Sullane joins the River Laney circa 1km east of Macroom town, before joining the River Lee a further 1km east.

6.2 Adjacent Abstraction & Discharge Points

There are a number of abstraction and discharge points located along the River Sullane & Lee Estuary both upstream & downstream of Macroom WWTP. A summary of the abstractions and discharges are as follows:

- Macroom WTP: Water for the Macroom WTP is currently abstracted from the River Sullane at a location circa 2.2km upstream of the Primary Discharge Point SW001 from the Macroom WwTP;
- Macroom WWTP: The aforementioned Primary Discharge Point SW001, Dual SWO/EO SW002 & SWO SW004 from the main Macroom WWTP all discharge to the River Sullane;
- Masseytown Pumping Station: The Dual SWO/EO SW003 from the Masseytown PS is located along the River Sullane circa 1.2km upstream of the main Macroom WWTP;
- Coolcower WWTP: The Primary Discharge Point for the Coolcower WWTP is located along the Lee Estuary, circa 1.2km downstream of the Primary Discharge Point SW001 from the Macroom WWTP.

6.3 Proximity to Designated Sites

The following designated sites are located within a 15km radius of the Macroom Primary Discharge Point SW001:

Table 6.1: Designated areas within 15km of the Macroom Primary Discharge Point

Site Code	Site Name	Designation	Distance to the designated site
IE000108	The Gearagh SAC	SAC	1.7km
IE000106	St. Gobnet’s Wood SAC	SAC	15km
004109	The Gearagh SPA	SPA	2.6km
004162	Mullaghanish to Musheramore Mountains SPA	SPA	6.8km

A Natura Impact Statement (NIS) was carried out for the development which concluded that the proposed development would not have any significant adverse effect on the integrity of any European sites during development and operation of the proposed upgrade at the Macroom WWTP, both alone or in-combination with any other plans or projects.

6.4 Receiving Water Quality Analysis

Biological Quality Ratings (Q Values) are recorded annually at a permanent monitoring point adjacent to the Macroom WWTP. The details of the monitoring station are noted below.

Table 6.2: Macroom WWTP Q-Values monitoring Location

Station Code	Station Location	WFD Code	Waterbody	Easting	Northing	Local Authority
RS19S020480	Ford u/s Laney R confluence	IE_SW_19S020480		135048	72709	Cork County Council

Table 6.3: Review of the Q-Values Recorded at the Macroom WWTP Monitoring Location

Station Code	2002	2005	2008	2011	2014	2017	2020
RS19S020480	4	4	4	4	4	4	4

The River Sullane, upstream and downstream of the Macroom WWTP, has a recent assigned ecological status “Good” under the Water Framework Directive (WFD) reaching a Q4 value in 2020.

6.5 Water Body Ecological Status

The River Sullane is assessed as part of Water Framework Directive (WFD) reviews. This assesses both the chemical and biological status of the watercourse on an annual basis. The previous 3 iterations of the ecological status of the water course are as follows:

Table 6.4: Ecological Status of the River Sullane

Period	Site Name	Ecological Status
SW 2016 - 2021	SULLANE_060	Good
SW 2013 - 2018	SULLANE_060	Good
SW 2010 - 2015	SULLANE_060	Good

It is noted that the waterbody (name LEE (CORK)_060) circa 200m downstream of the WWTP has a rating of ‘High’ Ecological Status.

6.6 Waterbody Risk Category

At present the water body is currently deemed ‘Not at Risk’.

6.7 Waterbody Objectives

The main aims of the WFD are to:

- Prevent deterioration and enhance status of aquatic ecosystems, including groundwater;
- Promote sustainable water use;
- Reduce pollution;
- Contribute to the mitigation of floods and droughts.

With regards to the River Sullane, the primary objective for the watercourse is to ‘Maintain Good Ecological Status’.

6.8 Waterbody Significant Pressures

Based on the 3rd Cycle Draft Lee, Cork Harbour and Youghal Bay Catchment Report (HA 19) ([Lee, Cork Harbour and Youghal Bay \(catchments.ie\)](#)) there are no significant pressures identified for the waterbody.

7 DESCRIPTION OF THE LIKELY SIGNIFICANT EFFECTS OF THE DISCHARGES ON THE ENVIRONMENT

The overriding objective of the proposed upgrade at Macroom WWTP is to provide Wastewater Treatment facilities that will comply with all relevant legislative requirements. The proposed improvement in treated effluent standards will ensure that the operational discharges from Macroom contribute towards maintaining 'Good' ecological status of the River Sullane and will ensure that there is no environmental risk posed to the receiving water environment as a result of the discharge.

A WAC Assessment Report (Attachment D.2.1) was carried out which, based on the above referenced design projections, determined that the River Sullane has sufficient assimilative capacity to accommodate the discharge from the upgraded WWTP, at the proposed ELVs.

8 MEASURES PLANNED TO MONITOR DISCHARGES INTO THE ENVIRONMENT:

It is proposed that the final secondary treated effluent from Macroom WwTP will be sampled and analysed (using the standard method of analysis) as follows:

Parameter	Units	Monitoring Frequency	Analysis Method/Technique
pH	pH Unit	Daily	pH Meter and recorder
cBOD	mg/l	Monthly	Electrode
COD	mg/l	Monthly	Colorimetric
TSS	mg/l	Monthly	Gravimetric
Orthophosphate (P)	mg/l	Monthly	Colorimetric
Total Ammonia	mg/l	Monthly	Colorimetric
Visual Inspection	Descriptive	Weekly	Standard Method
Flow	m ³ /24 hours	Continuous	Online flow probe meter with recorder

8.1 Ambient Monitoring:

Station code	Distance from Primary Discharge	Grid reference
RS19S020450 / aSW1u	Approx. 1.5 km Upstream of SW001	133805 E, 79277 N
RS19S020480 / aSW1d	Approx. 0.2 km Downstream of SW001	135048 E, 72709 N