

## Ballyvourney/Ballymakeera WwTW Upgrade Project - Improvement Programme

### **1. Introduction**

Prior to the WwTW upgrade, which was completed in September 2021, the sewerage collection system serving Ballyvourney and Ballymakeera villages conveyed flows to a septic tank located at NGR 121370E, 076407N in Ballymakeera Village. Primary treated effluent discharged to River Sullane *via* a 250mm open end concrete pipe at NGR 121490E, 076158N. This septic tank was built at a time when the p.e. contributing to it was far less than the present p.e. of 754. The wastewater was not receiving proper treatment as the septic tank system was inadequate to serve the current needs of the agglomeration in terms of capacity, operation, efficiency and treated effluent quality.

In 2007 the sewer network was upgraded, new foul lines were laid and the original foul sewer operated as a storm water system. The wastewater from the west of the agglomeration gravitated to the septic tank and the wastewater from the east of the agglomeration gravitated to the Pumping Station at the old Dairygold Creamery site (NGR 121295E, 076419N) from where it was pumped to the septic tank *via* a rising main. This Pumping Station had an existing Dual Function Overflow (*i.e.*, overflow which operated in storm events and/or electric failure events) from the wet well which discharged flows to an adjacent culvert to the Sullane River at NGR 121449E 076147N. This overflow did not operate in compliance with the criteria for storm water overflows, as set out in the DoEHLG Procedures and Criteria in Relation to Storm Water Overflows 1995.

### **2. Key Improvement Works Element**

The objective of the of the Ballyvourney/Ballymakeera upgrade project was to meet the requirements of the current Waste Water Discharge Licence (WDDL) - Licence Register Number: D0299-01, issued by the EPA in accordance with the Waste Water Discharge (Authorisation) Regulations (S.I. No. 684 of 2007) (now S.I. No. 214 of 2020) on the 9<sup>th</sup> October 2015.

#### **Upgraded Pumping Station**

The project involved upgrading the existing Ballymakeera Pumping Station at 121295E, 076419N. Previously, the wastewater from the west of Ballymakeera village, including Ballyvourney, gravitated to a septic tank, whilst the remaining sewage from the east of the village gravitated to Ballymakeera Pumping Station, from where it was pumped to a septic tank *via* a rising main.

Following the decommissioning of the septic tank, all flows are now diverted to the Pumping Station by gravity. The previous pumps have been removed and replaced with pumps each capable of transferring the 10-year Formula A flow of 39L/s to the new WwTP site. A new rising main, sized to carry the 30-year Formula A flow of 47.4l/s, has been installed from the Pumping Station to the new WwTP.

The overflow from the Pumping Station has been designed to function and operate as below:

- Activate during a complete mechanical/electrical failure of the Pumping Station;
- Activate when flows greater than Formula A (approx. 7 dry weather flow (DWF)) arrive at the Pumping Station;

Design measures to prevent deleterious discharges from the overflows include:

- Standby pump activates automatically upon failure of duty pump;
- Provision for the connection of a mobile power generator facility in the event of power failure;
- Upgraded mechanical screen - Overflows will be screened to 6 mm in all directions before discharging to the river;
- Upgrade of pump capacity from 15.7l/s to 39 l/s, *i.e.*, Formula A flow as set out in the DoEHLG Procedures and Criteria in Relation to Storm Water Overflows 1995, ensuring discharges occur during periods of high rainfall, which allows for increase dilution of discharge in receiving waterbody.

## **WwTP**

The new WwTP located at NGR 121316E, 076048N consists of:

- New Inlet Works
  - Fine Screens
  - Coarse Screened Bypass
  - Vortex Grit Removal
  - Flow Measurement
  - Storm Overflow
  - Storm Holding Tank
- Secondary Treatment from 2No. Oxidation Ditches
- Secondary Settlement by 2No. Radial Flow FSTs
- Chemical Dosing for Phosphorus Removal
- Tertiary Treatment by Disk Filter
- Picket Fence Thickener including Sludge Storage
- New outfall

The performance standards for final effluent quality (as per D0299-01) are as follows:

- Biological Oxygen Demand (BOD) – 25mg/l
- Chemical Oxygen Demand (COD) – 125 mg/l
- Suspended Solids (SS) – 35mg/l
- Ammonia- Total (as N) – 1.5mg/l
- Ortho-Phosphate (as P) – 0.8mg/l

The is 1 no. SWO at the WwTP has been designed in compliance with 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.

Any overflow event will be monitored and recorded at the electromagnetic flowmeters which have been installed at the WwTP and Pumping Station.

The new WwTP and improved level of the treatment and the operation of the upgraded Pumping Station will aid the receiving water body, the Sullane, in maintaining its High WFD status.

### **3. Programme for Completion of Improvement Works**

The new Ballyvourney/Ballymakeera WwTP upgrade has been completed and has been fully operational since the 9<sup>th</sup> September 2021.

The pumping station upgrade works were completed on 29<sup>th</sup> March 2021.