



**ATTACHMENT A.1**

**NON-TECHNICAL SUMMARY**



**ATTACHMENT A.1.1:  
NON-TECHNICAL SUMMARY**

## ATTACHMENT A.1.1 NON-TECHNICAL SUMMARY, DECEMBER 2023

### 1. Introduction

Coachford is a village approximately 22 km from Cork City and 12 km from Macroom. It is located North of the River Lee on the R618. The agglomeration was served by an overloaded septic tank of 402 Population Equivalent (p.e.) design capacity. As of 2022, the collected load of the agglomeration (peak week) was 665 p.e.

In January 2010, planning permission was applied for by Cork County Council under Part 8 of the Planning and Development Regulations for the construction of a 1,600 p.e. WwTP (30-year horizon) at Coachford, Co. Cork. The application was approved in May 2010 with conditions and the scheme progressed under this planning permission (Note: 10-year design horizon of plant is 1,400 p.e.).

The Coachford upgrade works, which were completed in Q4 2021, included the demolition and decommissioning of the existing septic tank, the construction of a new WwTP to provide secondary treatment with P removal, along with the construction of new concrete gravity sewers and an outfall pipe. This was done in order to ensure compliance with condition 1.7 of the Waste Water discharge Licence (WWDL): D0427-01, 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) issued on the 4<sup>th</sup> of December 2015.

Refer to **Attachment A.1.2** for the area of interest and **Attachment B.2.1** for a map of the Coachford agglomeration plan.

### 2. Description of the waste water discharges from the waste water works serving the agglomeration

#### **Discharge Scenario as per D0427-01**

##### Primary Discharge:

Treated effluent discharged (SW001) into the Inniscarra Reservoir *via* a 300mm outfall pipe of ca. 1.1km in length at 145231E, 72297N.

##### Secondary Discharges:

There were no secondary discharge points associated with the waste water works.

##### Overflows:

Two Storm Water Overflows (SWO), SW002 (NGR 145955E, 73162N) and SW003 (NGR 145947E, 73165N) were licensed under D0427-01. Both were located west of the entrance to the septic tank and consisted of 2 no. 225mm pipes which discharged to an open drain during periods of heavy rain. Both SWOs were decommissioned in 2016.

SW004 (unlicensed) was constructed in 2016. The SWO chamber was located immediately before the septic tank and excessive flows were diverted to the adjacent Knockaneowen Stream *via* a 600 dia pipe. There was no screening at this SWO. This SWO replaced the two SWO's identified in the Licence. The exact co-ords of this SWO discharge location is unknown. This SWO was decommissioned as part of the Coachford WwTW upgrade works completed in 2021.

## Discharges as per Subject Matter of Licence Review

### Primary Discharge (SW001):

The treated effluent from the new WwTP is conveyed *via* a new ca. 1.1km gravity outfall pipe to a backdrop manhole at OF17A which diverts flows from the new outfall pipeline to an existing manhole on the existing outfall pipeline. This existing submerged pipeline then acts as the main outfall, with the effluent discharge point (SW001) at NGR 145231E, 72297N (as per D0427-01).

### Secondary Discharge

There are no secondary discharge points associated with the waste water works.

### Overflows

There are 3 no. overflows arising from the Coachford WwTP (SW005, SW006 & SW007) as tabled below.

**Table A.1.1 – Overflows relating to WDDL Review**

<b>Overflow</b>	<b>Asset</b>	<b>Type</b>	<b>Overflow Co-ordinates (NGR)</b>
<b>SW005</b>	WwTP	SWO	145257E, 72497N
<b>SW006</b>	WwTP	SWO & EO	145231E, 72297N
<b>SW007</b>	WwTP	SWO	145231E, 72297N

SW006 is a Dual Function Overflow associated with the new inlet Pumping Station (*i.e.*, an overflow which can act as a Storm Water Overflow (SWO) or as an Emergency Overflow (EO) depending on the event). During a storm event where flows are greater than Formula A, water overflows from the inlet Pumping Station at the WwTP *via* a 6mm mechanical overflow screen and discharges to the Inniscarra Reservoir, *via* the primary discharge outfall pipe (refer to configuration of primary discharge outfall pipe above), at NGR 145231E, 72297N.

In the event of an emergency (*i.e.*, prolonged power failure or pump failure), water will overflow from the inlet Pumping Station *via* the inlet SWO chamber and discharge to the Inniscarra reservoir *via* SW006.

There is a high-level overflow located on the storm tank at the WwTP. The storm water tank starts to fill when flows greater than 3DWF are pumped forward from the inlet Pumping Station. All influent pumped forward undergoes preliminary treatment *via* the Inlet Works. The storm water tank has a capacity of 120m<sup>3</sup> which provides for up to 2 hours retention time. In the event of a prolonged storm event, water will continue to fill the storm tank until the capacity of the tank is exceeded. Once the capacity is exceeded, water will overflow from the storm tank and discharge to the Inniscarra Reservoir (SW007), *via* the primary discharge outfall pipe, at NGR 145231E, 72297N.

The SWO, SW005, will only be triggered during a storm event when the hydraulic capacity of the existing component of the primary discharge outfall pipe is overloaded. The design capacity of the existing primary outfall is estimated to be 175 l/s. The primary discharge outfall pipe has capacity for the flows through the WwTP provided that SW006 has not been activated. If SW006 is activated *i.e.*, when flows are greater than Formula A, and if

flows are greater than the design capacity of the existing outfall, then the excess flows will discharge *via* the new outfall headwall structure located at the edge of reservoir (SW005 - NGR 145257E, 72497N).

Refer to **Attachment B.2.2: Map 4 and Map 5** for the location of the discharges (*i.e.*, SW001, SW005, SW006 and SW007)

### **3. Description of the wastewater works and associated waste water treatment plant**

#### **Works as per D0427-01**

The wastewater collected from the agglomeration is mainly from domestic sources, including educational and commercial sources. There are no IPC or waste licensed activities discharging to the agglomeration or to the Inniscarra Reservoir upstream or downstream of the agglomeration. There is 1 trade effluent activity discharging to the agglomeration sewers under Section 16 of the Local Government (Water Pollution) Acts 1977 and 1990, (WP(S)-11-03) which has a licenced p.e. of 40.

The Works, prior to the upgrade, consisted of a septic tank which provided primary treatment to the waste water which discharged into the River Lee's Inniscarra Reservoir *via* the primary discharge point at NGR 145231E, 072297N. The septic tank was located at 146003E, 073146N and was built in the 1950s. The septic tank was overloaded, with very limited aeration and therefore provided little to no treatment to the waste water of the Coachford agglomeration. The p.e. of the works as constructed was 402.

The waste water entered the septic tank *via* 2 no. gravity sewers, both 225mm in diameter. The effluent combined in the inlet channel and was separated into 2 concrete channels and entered the septic tank.

There were 2 no. chambers within the septic tank of equal size. The treated effluent discharged from each chamber of the septic tank into an open channel. The effluent was then discharged into a 300mm outfall pipe (*ca.* 1.1km) from the septic tank to the Inniscarra Reservoir at 145231E, 72297N at the townland of Nadrid which is part of the Lee, Cork Harbour, and Youghal Bay Catchment Report (HA 19).

Refer to **Section 2** above for details of the overflow scenario as per D0427-01.

#### **Works as per Subject Matter of Licence Review**

The construction of the new Coachford WwTP and associated works were completed in Q4 of 2021. The new WwTP is located on the site of the existing Cork County Council Roads Department storage yard at 146003E, 73146N. The WwTP has a 30-year design capacity of 1,600 p.e. and a 10-year design capacity of 1,400 p.e. As of 2022, the collected load of the agglomeration (peak week) was 665 p.e.

The new WwTP provides secondary treatment with P removal and consists of the following key infrastructure elements:

- Inlet Pumping Station & SWO Chamber
- Inlet works
- Storm tank (120m<sup>3</sup>)
- 2. primary settlement tanks
- 2 no. primary settling tanks
- 4 no. RBC units
- 2 no. final settling tanks

The WwTP design is based on Rotating Biological Contactor technology which can treat the incoming influent to the required standard as outlined in the table below.

The primary discharge flows are continuously monitored by a V notch hydrostatic flow meter at the new WwTP.

Proposed effluent standards for the new WwTP are provided in **Table A.1.2** below:

**Table A.1.2 – Proposed Effluent Standards**

Parameter	Proposed Effluent Standards
<b>COD</b>	125mg/l
<b>BOD</b>	25mg/l
<b>Total Suspended Solids</b>	25mg/l
<b>Total Ammonia (as N)</b>	6.5mg/l
<b>Total Phosphorous (as P)</b>	1.2mg/l
<b>pH</b>	6-9 (pH Units)

The design flow standards of the new WwTP are provided in **Table A.1.3** below:

**Table A.1.3 – Design Flow Standards**

Parameter	Design Flow Rate
<b>Dry Weather Flow (DWF)</b>	Design (1,600 p.e): 360 m <sup>3</sup> /day Design (1,400 p.e): 315 m <sup>3</sup> /day
<b>Average Daily Flow (p.e x 225l/p.e/d x 1.25)</b>	Design (1,600 p.e): 450 m <sup>3</sup> /day Design (1,400 p.e): 393.75 m <sup>3</sup> /day
<b>Flow to Full Treatment (FFT) (3DWF)</b>	Design (1,600 p.e): 1,080 m <sup>3</sup> /day Design (1,400 p.e): 945 m <sup>3</sup> /day

#### Overflows

Refer to **Section 2** above for details of the overflows relating to this WWDA review.

#### **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 Éireann are 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, and their obligations under the Birds and Habitats Directives.

The WwTP upgrade has been designed to cater for a hydraulic and biological load of 1,600 p.e (30-year design horizon). The loads generated within the agglomeration however will not exceed 1,400 p.e (10-year design horizon) for the duration of the reviewed licence. Therefore, the p.e. to which this WWDL review application is 1,400 p.e.

Secondary treatment with P removal is provided at the new WwTP 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.

The proposed effluent standards as listed above give effect to the principle of the Combined Approach as defined in Waste Water Discharge (Authorisation) Regulations, 2007 to 2020

in that they accommodate the Urban Waste Water Regulations and the relevant status of the receiving waterbody, the Inniscarra Reservoir (see **Attachment D.2.1**: Impact Assessment Report and **Attachment D.2.3**: Dispersion Modelling Report, December 2023).

The 3 no. SWOs will operate 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.

A number of measures are in place to prevent unintended discharges to the receiving water, and they include the following:

- Provision of 120m<sup>3</sup> of storm storage provided at the WwTP.
- All alarms are linked to level measurement to alert to any spillage and are linked to SCADA with alarms sent to operators in the result of an emergency event.
- Uninterruptible Power Supply (UPS) backup for telemetry/plant controllers.
- Storm Water Overflows are screened to 6mm.
- Upon activation, overflow volumes are recorded *via* flow meters.
- Daily Flow Reports from the WwTP are received by the Control Room *via* SCADA.
- In the event of an emergency, a call out alarm system is in place in order to alert the contractor.
- A mobile standby generator will be provided at the WwTP, along with a connection point in the event of an interruption to the plants power supply.

Refer also to **Section C.2** for further details of the measures to prevent unintended discharges to the Inniscarra Reservoir from the Coachford WwTP.

## **5. The proposed technology and other techniques for preventing or, where this is not possible, reducing discharges from the wastewater works**

The WwTW has been designed, and will be operated, to ensure the primary discharge of treated effluent, and the activation of any Storm Water Overflows, do not cause a deterioration in the quality of the receiving water *i.e.*, Inniscarra Reservoir.

Refer to **Section C.2** for details of the measures to prevent any unintended discharges to the Inniscarra Reservoir.

## **6. Description of the receiving waterbody**

The new Coachford WwTP discharges into a lake water body, *i.e.*, the Inniscarra Reservoir (IE\_SW\_19\_138), at 145231E, 72297N. The Inniscarra Reservoir is within the Lee, Cork Harbour, and Youghal Bay Catchment (Hydrometric Area 19). This catchment includes the area drained by the River Lee and all streams entering tidal water in Cork Harbour and Youghal Bay and between Knockaverry and Templebreedy Battery, Co. Cork, draining a total area of 2,153 km<sup>2</sup>.

The draft 3<sup>rd</sup> cycle Catchment Report (2021) for this hydrometric area, determined that for river waterbodies excess nutrients remain the most prevalent issue, along with morphology, organic pollution, and hydrology. Pressures identified affecting the greatest number of waterbodies within Hydrometric Area 19 include hydromorphology, followed by agriculture, urban run-off, urban wastewater, domestic waste water, forestry, mines and quarries and industry. Coachford WwTP has not been listed as a significant pressure in At Risk waterbodies in the 2<sup>nd</sup> or draft 3<sup>rd</sup> cycle catchment assessment. The Inniscarra Reservoir is not listed as an area for action under the 3<sup>rd</sup> cycle.

The WFD status of the Inniscarra Reservoir is Good. There are no identified significant pressures for the Inniscarra Reservoir.

The Lee (Cork\_090) which is fed by the Inniscarra Reservoir ca. 11km downstream of the operational discharges has a Good WFD status.

At RS19L030600 (NGR 157242E, 71016N), ca. 14km downstream of the discharge location in the Lee (Cork\_090) waterbody the Q-value is 4 which corresponds to a 'Good' biological river water quality.

Downstream of the WwTP primary discharge location ca. 1.3km, ambient monitoring is tested at LS190022800800020 (NGR 146156E, 71656N).

Ambient monitoring is taken at LS190022800800020 at NGR 146156E, 71656N ca. 1.3km downstream of the primary discharge location. Based on recent water quality data for the Inniscarra Reservoir at the downstream ambient monitoring point from January 2022 – October 2023, the mean concentration for Ammonia is within the required EQSs for Good status (mean and 95%ile). However, the Total Phosphorous mean concentration is not compliant with relevant EQS for Good status (mean).

The Inniscarra Reservoir intersects the Lee River which is a WFD Designated Salmonid Waters under S.I. No. 293/1988. A proposed effluent standard of 25 mg/l for Total Suspended Solids and Ammonia of 6.5mg/l have therefore been set in keeping with the protection required under the WFD for salmonid waters.

The River Lee which is ca. 11km downstream of the Coachford WwTP primary discharge is a *Margaritifera margaritifera* pearl mussel site. The National Parks and Wildlife Service (NPWS) were consulted with in relation to the status of the Freshwater Pearl Mussel (*Margaritifera margaritifera*) during the EPA's determination of the WWDL in 2015. It was concluded that "Good" WFD status is required to protect the Pearl Mussel. The new WwTP will satisfy all relevant regulatory requirements and will be operated in line with the current EPA WWDL conditions. By applying the current EPA conditioned ELVs no significant impact on water quality in Inniscarra Reservoir as a result of the discharge from Coachford WwTP is anticipated (see **Attachment D.2.3:** Dispersion Modelling Report, December 2023). Adhering to these limits will contribute towards the receiving water maintaining its "Good" current WFD status. This will ensure the protection of any downstream Freshwater Pearl Mussel populations.

There are no designated shellfish waters or bathing waters located in the downstream vicinity of the operational discharges.

There are two drinking water abstraction points downstream of the operational discharges. These include 04000PUB1001 for the Lee Road Water Treatment Plant and 0500PUB3401 for the Inniscarra Water Treatment Plant. The 0400PUB1001 abstraction point is ca. 9.3km downstream of the primary discharge location and 0500PUB3401 is located ca. 9.7km downstream. Based on the Drinking Water Risk Assessment completed to inform this licence review (see **Attachment D.2.5**), the overall risk from the Coachford agglomeration operational discharges can be classified as 'low risk'. Drinking water quality is unlikely to be impacted during normal and abnormal operational conditions. This has been based on the high level of dilution in the receiving waterbody, the level of treatment and unintended discharges prevention measures at the new WwTP, the design and operation of the overflows, and the distance to the downstream abstraction points.

The nearest pNHA/NHA hydrologically connected to the operational discharges is the Lee Valley pNHA (Site Code: 000094), located ca. 11.8km downstream of the agglomeration.



However as noted above, it is considered that the operation of the WwTP and the operational discharges will not have a detrimental impact on the water quality of the Inniscarra/Lee Reservoir or the downstream Lee Valley.

There are no European sites immediately downstream of the operational discharges. The Cork Harbour SPA is *ca.* 30.2km downstream of the discharge location *via* the River Lee. The Great Island Channel SAC is *ca.* 34.8km downstream *via* the River Lee.

The Gearagh SPA (Site Code: 004109) and The Gearagh SAC (Site Code:000108) are the closest European sites to the Coachford agglomerations operational discharge location. These sites are located *ca.* 16.9km and 15.6km upstream of the agglomeration, respectively (*via* the River Lee (incl. Inniscarra and Carrigadrohid Reservoirs)).

An Appropriate Assessment (AA) Screening of the operational discharges assessed whether the discharge activity, alone or in combination with other plans and projects, are likely to have significant effects on European Sites in view of best scientific knowledge and the conservation objectives of the sites. On the basis of the information set out in the AA Screening, and documentation referenced therein, the likelihood of significant effects to the Cork Harbour SPA, Great Island Channel SAC, The Gearagh SAC and The Gearagh SPA, or any other European Sites, can be excluded, and a Stage Two Appropriate Assessment is not required. Refer to **Attachment D.2.2** for a copy of the AA Screening Report for further details on the receiving environment.

## **7. Description of the likely significant effects of the discharges on the environment**

Based on the proposed effluent discharge standards (see **Table A.1.2** above) and the design of the SWOs and the benefits of the increased hydraulic capacity of the WwTP along with the conclusions of the Dispersion Modelling Report, AA Screening Report, Priority Substances Assessment Report, Drinking Water Risk Assessment, and Impact Assessment Report, which support this review application, it is considered that the operational discharges from the Coachford agglomeration have no real likelihood of significant effects on the receiving aquatic environment, alone or in combination with other plans and projects.

The proposed effluent discharge standards have been set to ensure that the discharge from the Coachford WwTP contributes towards maintaining the Inniscarra Reservoir at Good status in accordance with S.I. No. 77 of 2019, and thereby will ultimately ensure that there is no environmental risk posed to the receiving water environment as a result of the discharges from the agglomeration.

Uisce Éireann is committed to ensuring that the Coachford WwTW operates in a manner that supports the achievement of the water body objectives under the Water Framework Directive, and their obligations under the Birds and Habitats Directives and all applicable Directives and National Regulations.

In summary, the proposed effluent discharge standards and the design of the overflows will ensure that the operational discharges from the Coachford agglomeration (i) contribute towards maintaining the "Good" WFD Status of the Inniscarra Reservoir in accordance with the European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended, and (ii) will ensure that there is no environmental risk posed to the receiving water environment as a result of the discharges from the agglomeration.

## 8. Measures planned to monitor discharges into the environment

### Effluent Monitoring:

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

**Table A.1.4** – Proposed Effluent Monitoring Regime

Parameter	Units	Monitoring Frequency	Analysis Method/Technique
Flow	m <sup>3</sup> /s	Continuous	On-line flow meter with recorder
pH	pH Unit	Bi-monthly	pH Meter and recorder
cBOD	mg/l	Bi-monthly	Standard Method
COD-Cr	mg/l	Bi-monthly	Standard Method
Suspended Solids	mg/l	Bi-monthly	Standard Method
Ammonia (as N)	mg/l	Bi-monthly	Standard Method
Total Phosphorous (as P)	mg/l	Bi-monthly	Standard Method

### Ambient Monitoring:

It is proposed that ambient monitoring and analysis will continue to be carried out downstream of the primary discharge, in line with any new licence requirements.

The proposed monitoring locations and parameters to be monitored are tabled below:

**Table A.1.5** – Proposed Ambient Monitoring Location and Parameters

Monitoring Location				Name of Receiving Water
146156	E	71656	N	Downstream LS190022800800020 (aSW001d)
				Inniscarra Reservoir (IE_SW_19_138)

**Table A.1.6** – Proposed Ambient Monitoring Regime

Parameter	Units	Monitoring Frequency	Analysis method/Technique
pH	pH Unit	Quarterly	pH meter/electrode
BOD – 5 days Total	mg/l	Quarterly	Standard Method
DO	% O <sub>2</sub>	Quarterly	Standard Method

Parameter	Units	Monitoring Frequency	Analysis method/Technique
<b>Total Phosphorous (as P)</b>	mg/l	Quarterly	Standard Method
<b>Total Ammonia</b>	mg/l	Quarterly	Standard Method
<b>Temperature</b>	°C	Quarterly	Thermometer
<b>Suspended Solids</b>	mg/l	Quarterly	Standard Method
<b>Visual inspections</b>	Descriptive	Daily	Standard Method

**9. Hours during which the wastewater works is supervised or manned and days per week of this supervision**

The WwTP runs automatically and is capable of being monitored remotely on a daily basis *via* the SCADA system. A dedicated curator attends the site several times a week and the hours spent each day at the plant vary depending on various factors or tasks *e.g.*, sampling, weather, breakdowns in plant or maintenance works required such as cleaning of the intake screens *etc.* There is a 24 hour call out response to alarms from the WwTP.

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

Uisce Éireann has concluded that an application for a licence review for the Coachford agglomeration is required for the following reasons:

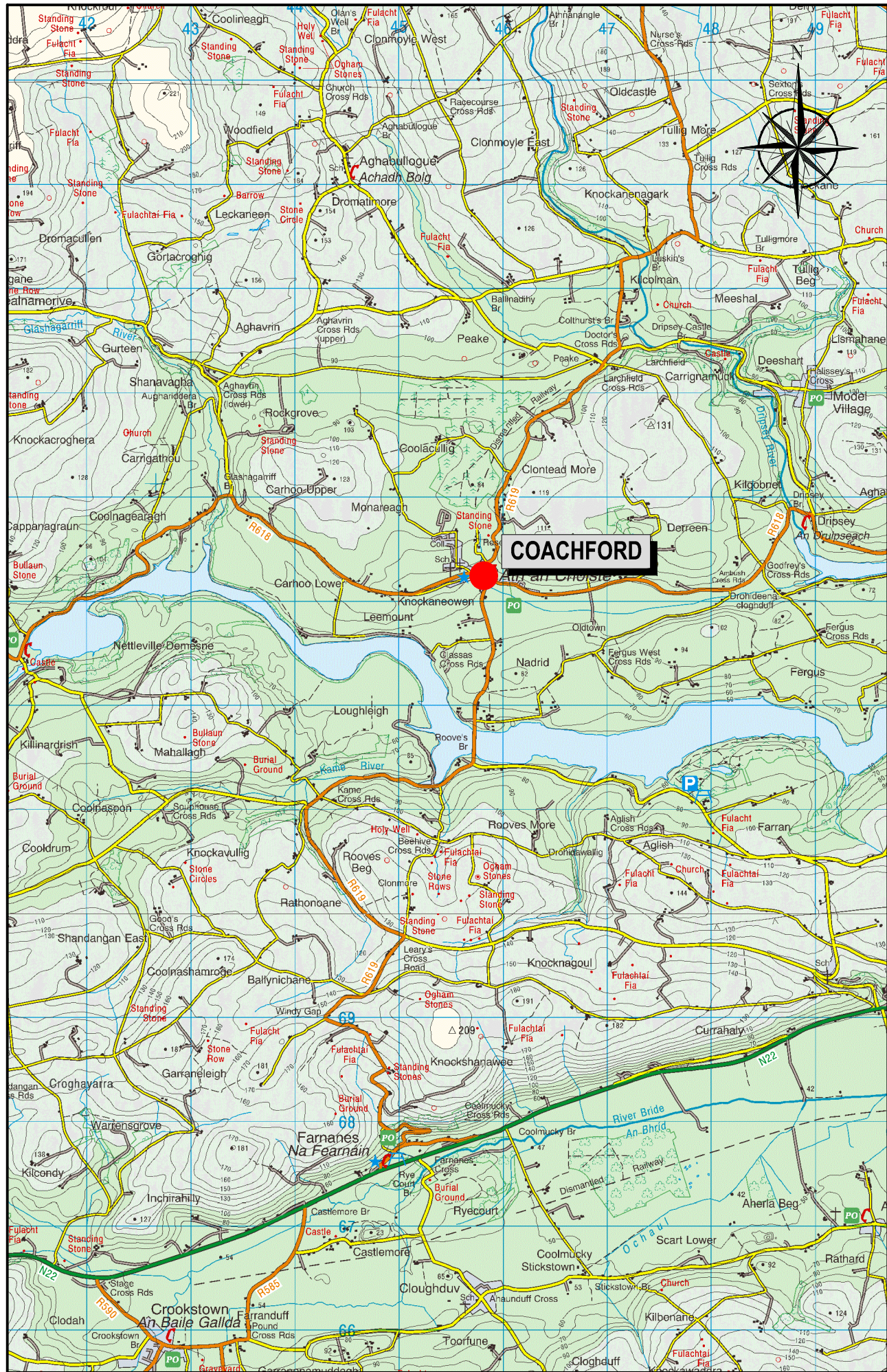
- The p.e at the time of the determination of D0427-01 in 2015 was less than 1,000 p.e. This application relates to a maximum p.e. of 1,400. This is a change in threshold bands from 500 to 1,000 p.e. to 1,001 to 2,000 p.e.
- The inclusion of 3 no. overflows (*i.e.*, SW005, SW006 and SW007) into the licence, and the removal of 2 no. licenced overflows from the agglomeration (*i.e.*, SW002 & SW003).

Other changes as a result of this application include:

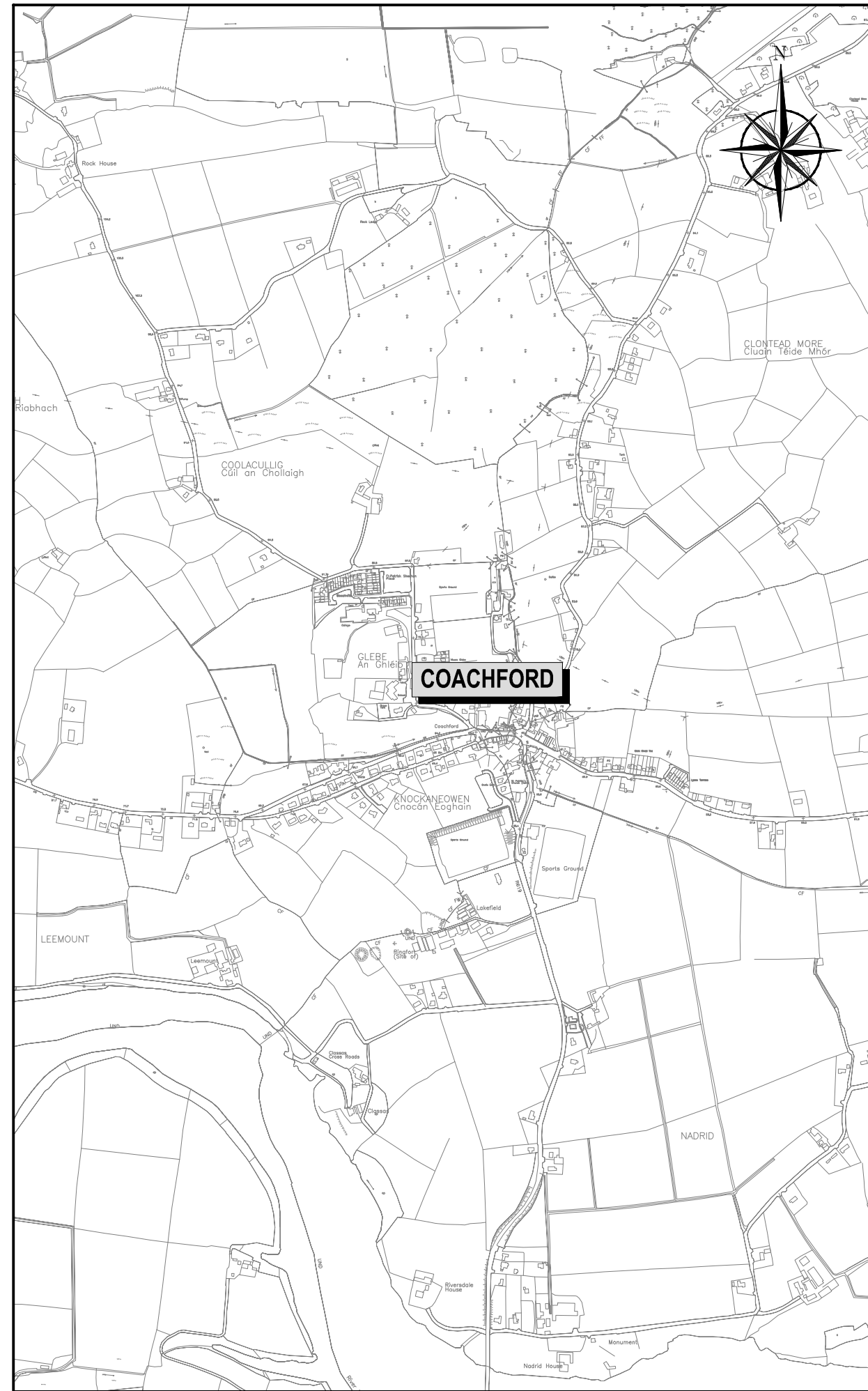
- Amendment to the agglomeration boundary.



**ATTACHMENT A.1.2:**  
**MAP 1 – AREA OF INTEREST**

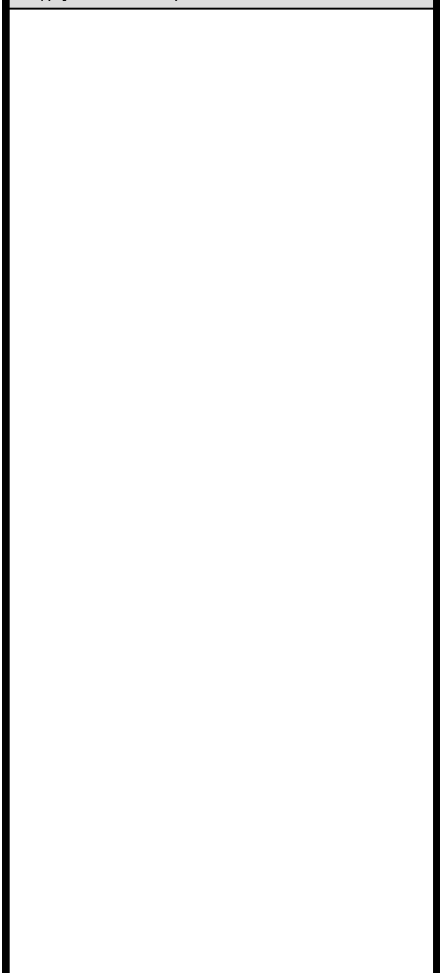


COACHFORD LOCATION MAP  
SCALE 1:50,000



COACHFORD LOCATION PLAN  
SCALE 1:12,500

NOTES  
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SIGNED: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

POSITION: \_\_\_\_\_

DATE: \_\_\_\_\_

FOR UISCE ÉIREANN

REV	DATE	DESCRIPTION	D	C	A

DISCHARGE LICENCE

CLIENT  
**Uisce Éireann**  
Irish Water  
UISCE ÉIREANN  
Cobhill House,  
24-26 Talbot Street,  
Dublin 1,  
Tel. 1890 278 278 Web. www.water.ie

PROJECT  
**COACHFORD  
WASTE WATER DISCHARGE  
LICENCE APPLICATION**

TITLE  
**MAP 1  
AREA OF INTEREST**

SCALES	DRAWN D.Rimdzius	REV
AS SHOWN	DATE 27.09.2022	-
CAD REFERENCE 20918-NOD-WWDL	ATTACHMENT <b>A.1.2</b>	-