

INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION

To:	DIRECTORS	
From:	STUART HUSKISSON	- ENVIRONMENTAL LICENSING PROGRAMME
Date:	17 TH MAY 2012	
RE:	APPLICATION FOR A WASTE WATER DISCHARGE LICENCE FROM CORK COUNTY COUNCIL (SOUTHERN DIVISION), FOR THE AGGLOMERATION NAMED YOUGHAL. LICENCE REGISTER NO. D0139-01	

Application Details	
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of more than 10,000.
Licence application received:	22 September 2008
Notices under Regulation 18(3)(b) issued:	08 th February 2011, 13 th September 2011
Information under Regulation 18(3)(b) received:	31 st March 2011, 14 th November 2011, 13 th December 2011
Site notice check:	17 th October 2008 & 24 th November 2008
Submissions received:	11 th January 2011, 19 th August 2011 & 28 th November 2011

1. Background

Youghal Harbour is located approximately 30km east of Cork Harbour and forms part of the lower estuary of the River Blackwater. The harbour and outer bay are popular tourist destinations, particularly during the summer months, and have a high level of recreational fishing, sailing and bathing activity.

At present there is no waste water treatment plant (WWTP) servicing the Youghal agglomeration's 12,070 population equivalent (p.e.). Cork County Council predict that the p.e. for the agglomeration up to 2016, based on predicted changes to domestic, commercial and trade effluent discharges, to be 14,300 p.e.. The application from Cork County Council (Southern Division) relates to the maximum design capacity of a proposed new WWTP, i.e., 16,000 p.e., which will be located at Mudlands, immediately north of the town. The new WWTP will discharge treated effluent to the River Blackwater M Estuary/Youghal Harbour, in the vicinity of Ferry Point. An EIS was required as part of the planning process and was submitted as part of the licence application. The EIS was approved on 20th March 2002.

The sewer network serving Youghal and environs has grown and expanded as the town developed through the mid and late 20th century. The separate/combined

network drains to three main discharge outfalls to the River Blackwater Estuary, at: (i) Paxe's Lane near Green Park; (ii) Dunn's Park; and (iii) Foxhole near Youghal landfill site. The Dunn's Park and Paxe's Lane outfalls are partially comminuted before being discharged.

2. Agglomeration

The agglomeration has an extensive collection system, and has both pumped and gravity systems within the network. The sewer network is mainly combined with some of the newer housing estates having been constructed with separate foul and surface water systems. Roof and road drainage generally discharge to the combined system, particularly in the town centre.

2.1 Current Treatment

There is no waste water treatment in the agglomeration other than a holding tank and comminutors on a portion of the Dunn's Park and Paxe's Lane outfalls. Waste water generated in the agglomeration is discharged to the River Blackwater Estuary via three main discharge points (Dunn's Park, Paxe's Lane and Foxhole).

2.2 Proposed Treatment

A new wastewater treatment plant (WWTP) and network upgrade is proposed for the Youghal agglomeration and is included in the Water Services Investment Programme 2010-2012 under Contracts to Start 2010-2012.

The works proposed to be carried out in the Youghal agglomeration under the 2010-2012 Water Services Investment Programme funding includes two separate, parallel contracts:

I. Network Upgrade Contract:

- a) New storm water and foul sewer drainage; gravity and pressure sewers in streets in Youghal town;
- b) Repairs to existing network;
- c) New pumping station at Green Park;
- d) Decommissioning and demolishing of Cork Hill comminutor station;
- e) Structural works to Strand Pumping Station;
- f) Minor works to Strand holding tank;
- g) Mechanical and electrical works to Summerfield Pumping Station, Strand Pumping Station and new Green Park Pumping Station;
- h) Ancillary works.

II. Waste Water Treatment Plant Design Build Operate Maintain (DBOM) Contract

- a) Upgrade to the existing Dunn's Park Pumping Station;
- b) Construction of a new rising main from Dunn's Park pumping station to the proposed WWTP at Mudlands;
- c) Construction of a new WWTP and access road;
- d) New outfall pipeline from the WWTP to Green's Dock and into the Blackwater Estuary.

Consultation with the Department of the Environment, Community and Local Government (DoECLG) Water Services Section indicates that the construction of the WWTP would be prioritised in light of the current lack of treatment and due to the proximity to nearby designated bathing waters. The DoECLG Water Services Inspector for the region advised that the works and new WWTP would likely be commissioned in 2015. This date shall be used as a reference in setting ELV's for proposed discharges.

2.3 Contributions

Cork County Council has predicted the maximum p.e. of the agglomeration over the lifetime of the licence to be 14,300 p.e. The predicted p.e. contribution is 65% domestic, 31.5% commercial and 3.5% trade.

The waste water works currently accept treated waste water from one licensed waste facility, a waste recovery/transfer and sludge drying facility at Foxhole Youghal, operated by ERAS ECO Limited (Reg. No. W0211-01). The maximum contribution of this discharge was determined by Cork County Council to be 57 p.e., based on the limits specified in the company's current waste licence.

The applicant has advised that following the development of the Youghal WWTP, leachate from Youghal Landfill (Waste Licence Reg. No. W0068-03) is proposed to be directed into the waste water works at the Foxhole Pumping Station and from there on to the new WWTP. Cork County Council has determined that the 2010 leachate volume and BOD concentration equates to a contribution of approximately 219 p.e. (1.4% of capacity) and a volume contribution of 0.6%. Cork County Council anticipates that the volumes and concentration of the leachate will reduce over time following the closure and capping of the landfill.

As this requested leachate contribution, if permitted to be discharged to the Youghal WWTP under Waste Licence W0068-03, is predicted to be at a volume less than 4%, no further assessment of leachate acceptance is proposed in the RL.

2.4 General

The RL as drafted provides regulation and control of discharges from the Youghal waste water works, it does not deal with the issues of odour, noise or management of the waste water works infrastructure as these matters are regulated under other legislative mechanisms.

3. Discharges to waters

3.1 Existing Discharges

As mentioned previously, there are currently three main discharge outfalls to the Lower Blackwater Estuary, at: (i) Paxe's Lane near Green Park; (ii) Dunn's Park; and (iii) Foxhole near Youghal landfill site. The Dunn's Park and Paxe's Lane outfalls are partially comminuted before being discharged.

The existing primary discharge, SW01-OLD (referred to as SW000 hereafter), discharges untreated effluent at Dunn's Park to the Lower Blackwater Estuary and accounts for the majority of the discharge from the waste water works, with a dry weather flow of 1,322m³/day and a maximum discharge rate of 7,920m³/day.

In total, there are ten discharges from the waste water works, i.e., the primary discharge (Dunn's Park), two secondary discharges (located at Paxe's Lane and Foxhole), six storm water overflows (SWOs) and one emergency overflow which may operate in the event of prolonged pump failure.

The Blackwater Estuary/Youghal Harbour is the receiving water for: (i) the primary discharge; (ii) two secondary discharges; and (iii) three SWOs. Three additional SWOs and one emergency overflow discharge directly to Youghal Bay.

3.2 Discharges: Proposed

A new wastewater treatment plant (WWTP) and network upgrade is proposed for the Youghal agglomeration and is to be completed on or before 31st December 2015. The new WWTP and network upgrade works will bring about a new primary discharge point, SW01-Future (referred to as SW0001 hereafter) located at Green's Quay, with a dry weather flow of 3,629 m³/day. In addition there will be: (i) three remaining SWOs, which will operate in compliance with the DoECLG 'Procedures and Criteria in Relation to Storm Water Overflows', 1995; (ii) four emergency overflows which may operate in the event of prolonged pump failure/blockage; and (iii) decommissioning of three discharge points (1 x secondary discharge point at Foxhole and 2 x SWO to Youghal Bay).

Therefore alterations as part of the sewer network upgrade will result in changes to the classification of a number of the discharge points, as shown in Table 1 overleaf.

Table 1. Discharge Point Classification – Existing and following Upgrade Works

Location	Applicant Reference	Short Code in RL	Current Classification	Classification following sewer network upgrade	Receiving Water	Receiving Water Type
Dunn's Park	SW01-OLD	SW000	Primary Discharge	SWO	Lower Blackwater Estuary	Transitional
Green's Quay	SW01-Future	SW001	—	Primary Discharge	Lower Blackwater Estuary	Transitional
Paxe's Lane	SW02	SW002	Secondary Discharge	Emergency Overflow	Lower Blackwater Estuary	Transitional
Foxhole	SW03	SW003	Secondary Discharge	Decommissioned	Lower Blackwater Estuary	Transitional
Summerfield Cross	SW04	-	Emergency Overflow	Emergency Overflow	Youghal Bay	Coastal
Front Strand Youghal	SW05	SW005	SWO	SWO	Youghal Bay	Coastal
Green Park	SW06	SW006	SWO	SWO	Lower Blackwater Estuary	Transitional
Dunn's Park	SW07	SW007	SWO	Emergency Overflow	Lower Blackwater Estuary	Transitional
Foxhole	SW08	SW008	SWO	Emergency Overflow	Lower Blackwater Estuary	Transitional
Kilcoran	SW09	SW009	SWO	Decommissioned	Youghal Bay	Coastal
Summerfield B	SW10	SW010	SWO	Decommissioned	Youghal Bay	Coastal

The existing primary discharge point (SW001) will cease to operate as the primary discharge and will be converted to act as a SWO, which will be required to operate in compliance with the DoECLG guidelines for Storm Water Overflows.

The upgrade works will bring about the decommissioning of the secondary discharge at SW003. Secondary discharge point SW002 and SWOs SW007 and SW008 will be upgraded to emergency overflows. Therefore, with the exception of storm water events and emergencies (i.e. extended pump failure/pipe blockage) the only discharge from the waste water works will be the treated primary discharge, SW001.

The applicant assessed the compliance of the SWOs with the requirements of the DoECLG guidance on SWOs and determined that two of the SWOs (SW009, SW010) are to be decommissioned and SW000, SW005 and SW006 will be brought into compliance with the guidance following the network upgrade works.

3.3 Discharge Requirements

The emission limit values specified in *Schedule A: Discharges* of the RL are set from 31st December 2015 or upon completion of the proposed WWTP (whichever is sooner). As the agglomeration has a p.e of greater than 10,000, the ELVs specified in the RL are as required by the Second Schedule, Part I of the Urban Waste Water Treatment Regulations, 2001, i.e., 25mg/l BOD, 125mg/l COD and 35mg/l Suspended Solids. In addition, the primary discharge from the proposed WWTP is to an estuary which is designated as a 'sensitive area'. This transitional receiving water is considered sensitive to nitrogen only under the Urban Waste Water Treatment Regulations and therefore the RL includes a limit for Total Nitrogen of 15mg/l. The proposed WWTP has a design specification to achieve all of the discharge concentrations specified above.

The status of the River Blackwater M Estuary/Youghal Harbour is 'Good' for DIN, as stated in the South Western RBD Transitional and Coastal Waters Action Programme,

despite the current discharge of untreated wastewater to the estuary. The provision of secondary treatment will further reduce the nitrogen loading discharged to the receiving waters. Section 4.1, below, includes additional information in relation to nitrogen within the receiving water.

The WWTP will include secondary treatment with nitrogen removal, with the specific treatment type and processes to be determined by the Design Build Operate and Maintain Contractor through a tendering process. The limits specified in the RL are considered to be achievable by secondary treatment with nitrogen removal. *Schedule B.1: Monitoring of Primary Waste Water Discharge* requires monthly monitoring of the discharge at the WWTP final effluent chamber. The frequency and scope of the monitoring may be amended under **Condition 4.11**.

The RL includes emission limit values for the existing primary and secondary discharges in line with the requirements of the Urban Waste Water Treatment Regulations, 2001-2010. There is currently no treatment of the waste water prior to discharge. **Conditions 3.4** and **3.1** of the RL require the applicant to take such measures as are necessary to ensure that there is no deterioration in the quality of the receiving waters as a result of the discharge and that no environmental pollution is caused.

3.4 Impact Assessment (Dispersion Modelling)

Cork County Council carried out a CORMIX model to assess the receiving water bacteriological water quality as a result of the discharges from the waste water works. This model was included in the EIS submitted with the licence application. The objective of the modelling exercise was to assess the bacteriological effects of the current wastewater discharges in the receiving water and to compare this with the proposed wastewater discharges from a secondary treatment plant with the primary discharge point located adjacent to Ferry Point.

This model predicts a significant reduction in faecal coliform levels in the harbour following network upgrade works and the development of a WWTP in Youghal, with secondary treatment (without disinfection), even with an increase in loading upto the design p.e. of the WWTP. The model is conservative as no decay factor for bacteria has been included in the model and a further reduction in the order of 50% over 12 hours can be expected for the prevailing tidal conditions.

The upgrade works will therefore assist the nearby designated bathing waters of Youghal Main Beach and Claycastle, both located in Youghal Bay, to meet the bathing water regulations guide values and assist these beaches to maintain Blue Flag status.

4. Receiving Waters and Impact

The following table summarises the main considerations in relation to the estuary downstream of the primary discharge.

Table 2. Receiving Waters

Characteristic	Classification	Comment
Receiving water name and type	River Blackwater M Estuary/Youghal Harbour	Transitional water (salinity ~26 psu) IE_SW_020_0100 2011 Status 'High' for Dissolved Oxygen 'Good' for DIN, MRP and BOD, and 'Moderate' for phytoplankton chlorophyll and opportunistic microalgae
Resource use	Port activities, shore fishing	-
Amenity value	Water sports, fishing, tourism bathing	Designated bathing waters and Blue flag beaches in Youghal Bay
Applicable	UWWT Regulations ^{Note 1}	Non-compliant (level of treatment)

Regulations	Surface Waters Regulations ^{Note 2} Bathing Water Regulations ^{Note 3}	Key transitional water requirements Nearby bathing waters: - Youghal Main Beach (1.7km downstream) 2010 - Compliant 2009 - Non-compliant
Designations	Nutrient Sensitive Area	Under S.I. 254 of 2001, as amended
WFD status	Moderate	Status date: 01/04/2011
WFD Objective	Restore by 2021	As per South Western RBD Transitional & Coastal Waters Action Programme and Womagh Water Management Unit Action Plan (WMUAP)
WFD Risk Category	<i>1a At Risk</i> of not achieving Good status	Reported to Europe: 22/12/2008
WFD protected areas	Youghal Main Beach Blackwater Estuary Lower SAC 002170 SPA 004028	Bathing water Nutrient sensitive area Blackwater River (Cork/Waterford) Blackwater Estuary
Conservation areas	NHA 000072	Blackwater River & Estuary

Note 1: Urban Waste Water Treatment Regulations, 2001 (S.I. No. 254 of 2001) as amended

Note 2: European Communities Environmental Objectives (Surface Water) Regulations 2009, S.I. No. 272 of 2009.

Note 3: Bathing Water Quality Regulations, 2008 (S.I. No. 79 of 2008)

The Womagh WMUAP identifies the Youghal agglomeration as having a p.e. of greater than 2,000 with a discharge to non-coastal water, no secondary treatment; insufficient existing capacity, no evidence of impact and a discharge to a protected area.

The Blackwater Estuary Lower is designated a sensitive area, under the Urban Waste Water Treatment Regulations, 2001-2010, from downstream of Dromana Ferry, to near East Point, Youghal Harbour.

The River Blackwater M Estuary/Youghal Harbour is classed as having 'Moderate' status and the objective is to 'Restore by 2021', i.e. it must achieve 'Good' status by 2021. Regarding the general conditions, the 2011 status was 'High' for Dissolved Oxygen (DO), 'Good' for Dissolved Inorganic Nitrogen¹ (DIN), Molybdate Reactive Phosphorus (MRP), and BOD and 'Moderate' for phytoplankton chlorophyll and opportunistic microalgae. The River Blackwater M Estuary/Youghal Harbour is classed as having a 'Good' Physico-Chemical Status and 'Moderate' Ecological Status.

4.1 Nitrogen

The River Blackwater M Estuary/Youghal Harbour is designated as a nutrient sensitive area under the Urban Waste Water Treatment Regulations, 2001 as amended. This transitional receiving water is considered sensitive to nitrogen only. The trophic status of the receiving water is intermediate ('07-'09), due to phytoplankton chlorophyll and opportunistic microalgae exceeding the relevant threshold values. The River Blackwater flows into Youghal Bay which is classified as unpolluted. The Trophic Status Assessment Scheme for estuarine and coastal waters underpins the UWWT Regulations identification of sensitive areas.

Water quality standards are set under the *European Communities Environmental Objectives (Surface Waters) Regulations 2009, S.I. No. 272 of 2009*, hereafter referred to as the E.O. Regs. These regulations do not specify standards for Total Ammonia or DIN in transitional waters. As River Blackwater M Estuary/Youghal Harbour has a 'Good' status for DIN, and there is no DIN standard specified for transitional waters, no limit for DIN is included within the RL. In relation to nitrogen, the only applicable regulations are the UWWT Regulations which specify a limit for discharges to designated nutrient sensitive areas. The RL specifies a Total Nitrogen

¹ DIN is the sum of oxidised nitrogen (nitrate and nitrite) and ammonium, expressed as mg/l N, and is considered to represent the readily available nitrogen uptake by plants.

limit of 15mg/l for the primary discharge (and the existing secondary discharges), in line with the requirement for a designated sensitive area. This limit requires denitrification of the treated effluent to take place and consequently residual ammonia levels <5mg/l will be discharged. The majority of the Total Nitrogen will be discharged as nitrate.

4.2 Ortho-phosphate

The E.O. Regs specify a median standard for Molybdate Reactive Phosphorus (*MRP*)² in transitional waters (0.04mg/l at 35psu³). Based on EPA monitoring from 2007-2009 the median salinity in the locality of the discharge point is 27.0psu, therefore the EQS for MRP is ≤0.049 mg/l (median), as the limit is salinity dependant. The upstream and downstream monitoring station results, as included in the application, show the median orthophosphate level to be 0.01mg/l P in summer (upstream and downstream), and 0.024mg/l downstream and 0.029mg/l upstream in winter. These values are compliant with the requirements of the E.O. Regs.. It is noted that phosphorus was not identified as a pressure parameter in the EPA's Trophic Status Assessment Scheme and as stated previously this receiving water is considered to be 'sensitive' to nitrogen only, under the Urban Waste Water Treatment Regs. (S.I. No. 254 of 2001, as amended).

The installation of a secondary treatment plant will bring about a reduction in the phosphorus emissions to the receiving water by approximately 10-15% with an expected Total Phosphorus discharge concentration of between 5-10 mg/l. Therefore the RL does not specify an ELV for Phosphorus/Ortho-phosphate, but the RL does require the applicant to reduce the total phosphorus loadings in the discharge to the maximum practicable extent.

4.3 BOD, COD & Suspended Solids

The monitoring results for 2009, as included in the application, show the mean BOD concentration in the locality of the proposed primary discharge to be 1.25mg/l. This value is significantly below the 4.0mg/l BOD limit for a transitional water body, as specified in the *European Communities Environmental Objectives (Surface Waters) Regulations*. The development of a secondary treatment plant to treat the wastewater generated in the agglomeration will significantly reduce the BOD loading to the Blackwater Estuary Lower and will assist in reducing the receiving water levels. The RL specifies a BOD, COD and Suspended Solids ELV for the primary discharge in line with the requirements of the UWWT Regulations.

4.4 Appropriate Assessment

Cork County Council undertook an Appropriate Assessment and submitted this as part of the licence application. See Section 9.10 of this report for further information.

5. Ambient Monitoring

As the current discharges to the Blackwater Estuary and sea are essentially raw effluent, there is no requirement in the RL for monitoring the current discharges. Upon completion of the proposed WWTP, monitoring should be in accordance with *Schedule B.1: Monitoring of Primary Waste Water Discharge* of the RL. The ambient monitoring requirements included in the RL (*Schedule B.4: Ambient Monitoring*) are sufficient to verify that there is no deterioration in the status of the receiving water as a result of the discharges. The applicant may be required to carry out microbiological monitoring as required, to ensure there is no deterioration in the status of the receiving waters as a result of the discharges.

² Molybdate-Reactive Phosphate [MRP] is broadly equivalent to "ortho-phosphate" as determined using the ascorbic acid/molybdate colorimetric procedure. (Ref: *Parameters of Water Quality – Interpretation and Standards*, EPA, 2001).

³ psu: Practical Salinity Units

6. Combined Approach

The Waste Water Discharge Authorisation Regulations, 2007 (S.I. No. 684 of 2007) specify that a 'combined approach' in relation to licensing of waste water works must be taken, whereby the emission limits for the discharge are established on the basis of the stricter of either or both, the limits and controls required under the Urban Waste Water Treatment Regulations (S.I. No. 254 of 2001) as amended and the limits determined under statute or Directive for the purpose of achieving the environmental objectives established for surface waters, groundwater or protected areas for the water body into which the discharge is made. The RL as drafted gives effect to the principle of the Combined Approach as defined in S.I. No. 684 of 2007.

7. Discharges where no treatment or insufficient treatment is in place

As there is currently no municipal WWTP in Youghal, the principal requirement is to eliminate the untreated waste water discharges to the receiving transitional/coastal waters and to provide a WWTP that treats the waste waters to a standard that complies with National and EU legislation. A WWTP and network upgrade works are required by 31st December 2015. **Condition 3.1** requires that, where discharges are required to comply with emission limits by a specified date, the licensee shall, prior to this date; take measures to ensure that environmental pollution is not caused as a result of the discharges.

The overall aim under the Water Framework Directive is for waters to achieve 'Good' water quality status by a specified date. The River Blackwater M Estuary/Youghal Harbour is at 'Moderate' status and has the objective to 'restore by 2021' to 'Good' status. The planned improvement works in the Youghal agglomeration, as set out in Section 2 of this report, will contribute significantly to achieving this aim.

8. Programme of Improvements

The programme of improvements outlined for the Youghal agglomeration is contained within the Water Services Investment Programme (WSIP) 2010-2012, which is due to be completed by December 2015. The cost is approximately €10 million for the construction of a WWTP with a design capacity of 16,000 p.e. and an additional cost of €8 million for sewer network upgrade. The funding is split between the contributions from the DoECLG through the WSIP and from Cork County Council. The specific upgrade works are listed in Section 2 of this report.

The RL (**Condition 5** and *Schedule C*) sets out the programme of improvement for the waste water works. The collection system will be upgraded to ensure that the frequency of storm water overflows will not exceed the DoECLG criteria. The RL requires the SWOs to be assessed and, where required, a programme of improvements implemented to bring these into compliance with the DoECLG criteria.

Compliance with the conditions in the RL will ensure no further deterioration in the quality of the receiving waters as a result of the discharges from the waste water works. The ELVs have been set to assist in improving the water quality in the receiving water and with the aim of achieving and maintaining 'Good' status.

Condition 1.7 of the RL requires the applicant to undertake an annual assessment of the remaining organic and hydraulic treatment capacities within the waste water works and when approaching capacity the licensee is required to notify the Agency and seek a licence review, as appropriate.

9. Compliance with EU Directives

In considering the application, regard was had to the requirements of Regulation 6(2) of the Waste Water (Discharge) Authorisation, Regulations, 2007 (S.I. No. 684 of 2007) notably:

9.1 Drinking Water Abstraction Regulations

Discharges in the Youghal agglomeration are to transitional waters. Therefore, there are no water abstraction points downstream of any of the discharges.

9.2 Sensitive Waters

The River Blackwater M Estuary/Youghal Harbour is designated as a nutrient sensitive area under the Urban Waste Water Treatment Regulations (S.I No. 254 of 2001, as amended). This transitional receiving water is considered sensitive to nitrogen only under the Urban Waste Water Treatment Regulations, 2001 - 2010. The RL includes an ELV for Total Nitrogen from the new Youghal WWTP that will ensure compliance with the requirements for a discharge to a designated nutrient sensitive area.

9.3 Water Framework Directive [2000/60/EC]

The RL, as drafted, transposes the requirements of the Water Framework Directive (WFD). In particular, **Condition 3: Discharges** provides conditions regulating discharges to waters while *Schedule A: Discharges* specifies ELVs for those substances contained within the waste water discharge. The limits specified in the RL are determined with the aim of achieving 'Good' water quality status by the extended deadline of 2021, as specified in the *South Western River Basin Management Plan - Programme of Measures*, and these limits will contribute to the Directive's objective of safeguarding Protected Areas.

9.4 European Communities Environmental Objectives (Surface Water) Regulations 2009, S.I. No. 272 of 2009

The River Blackwater Estuary Lower/Youghal Harbour currently has a 'Moderate' water quality status. The ELVs specified in the RL are set to ensure that the receiving waters meet the requirements of these regulations.

9.5 Urban Waste Water Treatment Directive [91/271/EEC]

Youghal does not comply with the requirements of the Urban Waste Water Treatment (UWWT) Directive in terms of the level of treatment provided, i.e., there is currently no waste water treatment and the p.e. of the agglomeration is >2,000. The UWWT Directive required the Water Services Authority to provide for secondary treatment or an equivalent treatment by 31st December 2005 in respect of the Youghal agglomeration. The RL, as drafted, has regard to the requirements of the UWWT Directive and requires the licensee to provide a WWTP in the Youghal agglomeration by 31st December 2015. Monitoring of the primary discharge from the new WWTP is specified in the RL in accordance with requirements of the UWWT Directive, i.e., monthly.

9.6 Bathing Water Directive [2006/7/EC]

The River Blackwater M Estuary/Youghal Harbour is not a designated bathing water, although the nearby Youghal Main Beach (approximately 100 metres to the west of the mouth of Youghal Harbour) and Claycastle Beach are designated.

In the Agency's report on '*The Quality of Bathing Waters in Ireland 2010*', Youghal Main Beach and Claycastle Beach bathing waters were deemed to comply with EU Mandatory and Guide Values (Good Quality) and National standards.

The development of a WWTP with secondary treatment in Youghal and the proposed network upgrade will reduce untreated discharges to River Blackwater Estuary/Youghal Harbour and to Youghal Bay. This will assist in improving water quality and assist Youghal Main Beach and Claycastle Beach meet the requirements of the Bathing Waters Directive. The modeling carried out by the applicant concluded that the WWTP discharge would not adversely impact on bathing waters. Following

the development of the WWTP and network upgrade works, SW001 will be located in the Blackwater Estuary Lower, over 1.7km north of Youghal Main Beach.

9.7 EC Freshwater Fish Directive [2006/44/EC]

The freshwater section of the River Blackwater is a designated salmonid water (78/659/EEC). Discharges in the Youghal agglomeration are to the Estuary which is designated a transitional waterbody. Therefore, the requirements of the above directive do not apply.

9.8 Shellfish Waters Directive [2006/113/EC]

There are no designated shellfish waters located at or adjacent to the discharge points from the existing or proposed Youghal waste water works.

9.9 Dangerous Substances Directive [2006/11/EC]

The applicant has provided sampling results for all of the 19 dangerous substances in the primary discharge for the purposes of the licence application. The applicant clarified in additional information that there was a typographical error in the parametric values originally provided for Nickel and Cadmium. Based on these updated results, the measured concentrations are not considered significant. Monitoring of receiving waters has shown compliance with the Dangerous Substances Directive.

9.10 Birds Directive [79/409/EEC] & Habitats Directive [92/43/EEC]

The existing primary discharge from the Youghal agglomeration and the new primary discharge location following the network upgrade and development of WWTP will be to the Blackwater Estuary Lower. This estuary includes: (i) one designated Special Protected Area (SPA); (ii) one designated Special Area of Conservation (SAC); and (iii) one Natural Heritage Area (NHA) (designated under the Wildlife (Amendment) Act 2000), all of which cover different areas of the Blackwater Estuary/Youghal Harbour. These are:

- a. The Blackwater Estuary SPA - This extends from Youghal New Bridge to the Ferry Point peninsula. This SPA is an internationally important wetland site on account of the populations of Black-tailed Godwit it supports. It is also of high importance in a national context due to the populations of eight bird species, which exceed the threshold for national importance. The occurrence of Little Egret, Golden Plover and Bar-tailed Godwit is of particular note as these are listed on Annex I of the Birds Directive;
- b. The Blackwater River (Cork/Waterford) SAC is selected for alluvial wet woodlands and Yew wood, both priority habitats listed on Annex I of the Habitats Directive. The site is also selected for floating river vegetation, estuaries, tidal mudflats, *Salicornia* mudflats, Atlantic salt meadows, Mediterranean salt meadows, perennial vegetation of stony banks and old Oak woodlands. In addition the site is selected for species listed on Annex II of the Habitats Directive. The estuary and other Annex I habitats within it form a large component of the site. The shingle spit at Ferry point supports a good example of perennial vegetation of stony banks. The site supports several Red Book plant species and is of considerable conservation significance for the occurrence of good examples of habitats and of populations of plant and animal species listed on Annexes I and II of the Habitats Directive. It is noted in the Site Synopsis that the main threats to the site and current damaging activities include high inputs of nutrients into the river system from 'sewage plants'.
- c. The Blackwater River Estuary NHA includes a drowned river valley with wet woodland and good floodplain marshes for wintering birds at Kinsalebeg and Youghal.

The existing primary discharge from the agglomeration discharges directly into the Blackwater Estuary SPA (004028), Blackwater River (Cork/Waterford) SAC (002170) and Blackwater River Estuary NHA (000072). In addition one secondary discharge

(SW003) and two SWOs (SW007 and SW008) discharge into this designated SPA site. One additional secondary discharge (SW002) and one SWO (SW007), discharge into both the designated SAC and NHA sites.

Following the development of a WWTP in Youghal and upgrade of the sewer network, the new primary discharge point for treated effluent will be located approximately 40 metres downstream of the designated SPA site, and will discharge directly into the designated SAC and NHA sites.

As stated in Section 3.2 of this report, the upgrade works will bring about the decommissioning of the secondary discharge at SW003. Secondary discharge point SW002 and two SWOs (SW007 and SW008) will be upgraded to emergency overflows. Therefore, with the exception of storm water events and emergencies (i.e. extended pump failure/pipe blockage) the only discharge to these designated areas will be the treated primary discharge, via SW001.

There are discharges from the Youghal waste water works directly into sites designated under the E.U. Habitats or Birds Directives.

A screening (Stage 1) for Appropriate Assessment of the discharges from the agglomeration was undertaken to assess, in view of best scientific knowledge and in view of the conservation objectives of the sites, if the discharges, individually or in combination with other plans or projects are likely to have a significant effect on the European Site(s).

The applicant determined that an Appropriate Assessment was required and submitted a Natura Impact Statement, as defined in Regulation 2(1) of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011).

The Appropriate Assessment demonstrates that the discharges will not adversely affect the integrity of the European Sites.

In accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), pursuant to Article 6(3) of the Habitats Directive, the discharges from the Youghal waste water works will not adversely affect the integrity, in terms of maintaining favourable conservation status of the qualifying interests of the European Sites, having regard to its conservation objectives.

9.11 Environmental Impact Assessment Directive [85/337/EEC]

An EIS and a copy of the planning approval was submitted in accordance with the Wastewater Discharge (Authorisation) Regulations 2007. In assessing the application regard was had to the matters mentioned therein in so far as they related to the risk of environmental pollution of the River Blackwater M Estuary/Youghal Harbour from the waste water discharge associated with this agglomeration. Should any further EIS be required as part of any programme of new WWTP or significant upgrade, it will be dealt with as per **Condition 1.8** of the RL.

9.12 Environmental Liabilities Directive [2004/35/EC]

Condition 7.2 of the RL satisfies the requirements of the Environmental Liabilities Directive in particular those requirements outlined in Article 3(1) and Annex II of 2004/35/EC.

10. Site Visit

I did not carry out a site visit to this agglomeration but a site notice check was carried out by the Agency on 17th October and 24th November 2008.

11. Cross Office Liaison

Information relating to the River Blackwater M Estuary/Youghal Harbour monitoring programme results was provided by and discussed with Mr. Shane O'Boyle of the

Office of Environmental Assessment. This information was incorporated into the assessment detailed above.

Advice and guidance issued by the Technical Working Group (TWG) was followed in my assessment of this application. Advice and guidance issued by the TWG is prepared through a detailed cross-office co-operative process, with the concerns of all sides taken into account. The Board of the Agency has endorsed the advice and guidance issued by the TWG for use by licensing Inspectors in the assessment of wastewater discharge licence applications.

12. Submissions

Three submissions were received in relation to this discharge licence application; these were all received from residents: Mr. John & Ms Ann FitzGerald, Upper Strand, Youghal, County Cork. The main issues raised in the submissions are summarised below, however, the original documents may be referred to for greater detail and expansion of the particular points.

Submission No. 1: The first submission, received on 11th January 2011, relates to on-going issues in relation to periodic discharges of sewage from a mains sewer manhole located on Mr & Ms FitzGerald's property. The key points raised were:

- (a) Concern over the condition of the sewer pipelines (and associated manholes) which traverse Mr & Ms FitzGerald's property. Sewage spills from the manhole were witnessed and recorded on a number of occasions (including 7th September 2010 and 29th October 2010), despite the manhole having been sealed by Cork County Council. The submitters state that their land is waterlogged and saturated and prevented from draining naturally as a result of un-operational (storm water) outfalls at Front Strand. Any sewerage discharges from the network readily enter the adjacent open French surface water drainage channel network which exit via sea outfalls at Front Strand.
- (b) Concern over the condition of mains public sewerage pipelines and associated manholes in the general Williamstown-Claycastle area.
- (c) Concern over the condition and structural integrity of the Strand Holding Tank and the overflow pipe from the tank, which discharges at Front Strand.
- (d) The overloading of the open surface water drainage network in the low-lying areas of Williamstown and Claycastle and the continuing lack of an operational outfall at Front Strand for surface waters from the entire catchment, despite installation in 2010 of different valve arrangements and a proposed deep water extension to the Lower Outfall at Front Strand.
- (e) The potential risk of damage to the existing outfall infrastructure during public works, as had happened during previous sewerage works in 1979 and 2005, whereby on both occasions the outfall pipe was broken by contractors.

The submission goes on to state that the issues regarding water quality in the area have been raised with the EPA - Ref: PAE2008/68.

Response:

Points (a) and (b): Cork County Council provided information to advise of the main works in the Williamstown/Claycastle area under the Youghal Main Drainage Scheme upgrade works, subject to funding and DoECLG approval. The proposed works are due to be completed by 31st December 2015 and include:

- Replacement and repair of the existing pipework along Upper Strand;
- Separation where possible of storm and waste water flows;
- Diversion of separated storm water flows around the Front Strand Holding Tank through an oil/petrol interceptor to discharge directly via the existing long outfall;

- Alterations to the Front Strand Holding Tank to include new weir levels to reduce the spill frequency to 2 spills (maximum) per bathing season and to screen the overflow;
- Upgrades to the existing Front Strand Pumping Station.

Cork County Council advised that the final model identified 5 spills from the tank in 20 bathing seasons. This is made up of two spills in one season, and three other seasons of one spill each. The total volume spilled in each bathing season is predicted to be less than 1% of the annual rainfall runoff to sewers in the catchment.

Point (c): Cork County Council advised that the Front Strand Holding Tank is to be upgraded, as detailed above, with the maximum predicted spill rate of two per bathing season.

Point (d): Cork County Council advised that works with regard to the open surface water drainage system and the associated outfalls onto the Front Strand is not currently part of the scope of the Youghal Main Drainage project. They state that consultants have been appointed to examine the surface water runoff in the catchment and make recommendations on remedial works. On completion of the study the applicant states that these recommendations may, subject to funding, form part of the project. A temporary extension of the lower outfall has been completed. Cork County Council state that the amendments affect the storm water flow only, as these outfalls do not form part of the waste water works.

Point (e): Cork County Council advised that it is not anticipated that the works will have any impact on the existing surface water outfalls at Front Strand. All works will be subject to full-time supervision by a resident engineering team and any damage to existing infrastructure will be made good by the contractor. The applicant advises that in the event that the contractor fails to make good any damage, a sum will be retained from the contract to finance repairs.

In relation to the Public Authority Enforcement file (PAE2008/68), the OEE have advised that Cork County Council were requested to meet the complainants directly to outline their plans to address the issues raised in their complaint. There is on-going liaison between Cork County Council and the complainant on these issues.

Submission No.2: The second submission, received on 19th August 2011, includes further information on specific issues with the waste water works in the vicinity of the residents' private dwelling and reiterates some of the points made in their previous submission.

Mr. & Ms. FitzGerald point out that there are three public mains sewers which traverse their property and state that they have repeatedly raised sewerage and drainage infrastructural problems with relevant organisations, including Cork County Council, An Bord Pleanála, the Minister for the Environment Heritage & Local Government, An Taisce and the EPA in relation to water quality issues. The main issues raised include:

- Issues with new planning permissions and retentions in the area discharging to the sewer network;
- Issues in relation to access to the waste water works for maintenance;
- A request for information from Cork County Council on the sewer maintenance proposals and whether the sewer lines which traverse the submitter's property will be abandoned/decommissioned as part of the Youghal Main Drainage Scheme upgrade works (along with a request for the decommissioning of same).
- Raw sewage discharges over the submitter's garden, flowing into surface water drains, causing pollution and discharging at the Front Strand beach when the Lower Outfall was manually cleared of sand/gravel;
- No clean up by Cork County Council following discharges;
- Potential health and safety risks due to raw sewage discharges to land;

- Issues with the Upper Outfall and Lower Outfall (storm water) at Front Strand being buried and un-operational, leading to additional flooding in the area;
- Inadequacy of the sewer network at Williamstown and historical issues;
- Issues with spillages from network in locality and manholes having been built upon, including discharges from manhole 4301 at each high tide;
- The low level and condition of some manholes and issues with pipe diameters;
- Concern over the structural integrity of the Strand Holding Tank, with the holding tank full at high tide and a smell of sewage in the area;
- Request for clarification on how Cork County Council know when the holding tank is full, how this is recorded, how people are warned in the bathing season and clarification as to how the emergency overflow operates;
- Comment that the input of seawater and beach materials should not form part of the operation of the Strand Holding Tank, or the waste water network;
- Comment that Cork County Council are aware of sea water infiltration but to date no actions have been taken to prevent this;
- Cracks in the concrete emergency overflow pipe at Front Strand;
- Request for removal of fill material around the Strand Holding Tank to provide for inspection; and
- Repeated reporting of unexplained discharges from the sewer network close to the Strand Holding Tank.

The submission included a copy of a response letter from Mr Kevin Costelloe, Senior Engineer, Cork County Council outlining the initial proposed remedial works.

The submission included a request for the Water Services Authority to inspect infrastructure at Williamstown to prevent further pollution of groundwater, surface water and bathing water and to prevent infiltration of seawater/beach material.

The submission states that the inputs to the surface water drainage system should be identified and also includes a request for Cork County Council to accurately map the alterations to the drainage network. The submission goes on to request that Cork County Council clarify the location, route and connections of specific drainage channels which may have an influence on the drainage channels located on the submitter's property.

Response:

It should be noted that only issues which relate to the discharges from the Waste Water Works can be addressed by the Waste Water Discharge Licensing process. Issues in relation to odour, the management of the waste water works infrastructure and the management of surface water and maintenance of surface water infrastructure are regulated under other mechanisms.

Cork County Council have provided a response to this submission and advise that:

- The maintenance of the sewer lines has required access to private property over established wayleaves and Cork County Council does not have proactive maintenance for sewers but deal with issues as they occur.
- The DoECLG, in approving the Preliminary Report did not approve the option for simplifying the pipework arrangement, which would have led to the sewers through the complainant's property being made redundant.
- Cork County Council accept that there have been a number of incidents of spills from a manhole on the submitter's property. Cork County Council advises that they have completed Phase 1 interim works and state that they will address the issue as Phase 2 of the interim works. These Phase 2 interim works require access to the submitter's land and the applicant has stated that they have not, as yet, been granted access to carry out these works.
- The Upper and Lower Outfalls to Youghal Front Strand do not form part of the waste water works and are not relevant to the licence application.
- The sewers on the submitter's property are not redundant and the separation of storm waters upstream will address the hydraulic loading issue.

- CCTV surveys to date do not show structural issues with the sewers. Sewers entering and exiting the complainant's private property show no signs of damage.
- The request for decommissioning of the pipelines on the submitter's property will be examined.
- Cork County Council state that they are not in a position to comment on historic events raised in the submission.
- Works as part of the Youghal Main Drainage Scheme will reduce hydraulic loadings in the system and will reduce the spill frequency.
- CCTV survey completed as part of the Preliminary Report does not indicate a manhole cover or invert level at a point identified in the submission.
- Further CCTV surveys are required to determine if manhole 4304 is in fact a buried manhole and this would require access to the submitter's property.
- Manhole 145/145a - The overflow is open-ended and surcharges at high tide. A non-return valve will be installed on the outfall as part of the drainage works.
- The structural condition of the holding tank will be further accessed during the Main Drainage Contract Works.
- The complainant should confirm how the level in the holding tank was examined.
- Manhole 4301 discharged through cracks in the upper section of the manhole at high tide was witnessed by Cork County Council staff and its contactors on several occasions when levels in the Holding Tank were low. Cork County Council advises that this manhole has now been sealed.
- To prevent significant sea water ingress an overflow box has been constructed within tank and the overflow level set to prevent sea water entering the tank.
- Overflow events are not currently recorded.
- Works as part of the Youghal Main Drainage Scheme will involve installation of non-return valves on the overflow and monitoring system.
- Sea water and beach material enter the overflow from the Strand Holding Tank as it is open ended, but the beach material does not reach the tank.
- There is a very minor leak through a gate valve into the tank at high tide, which does not impact on the operation of the sewerage system.
- Exposure of cracks in the concrete surround to the overflow pipes did not show any leakage and cracking of concrete surround does not automatically indicate damage to the system.
- The unexplained discharges into the surface water drainage channel are not from the sewer. This appears to be surface water runoff and the CCTV survey supports this conclusion.
- Cork County state that the filling/dumping of material in the vicinity of the Strand Holding Tank is not relevant to the Waste Water Discharge Licence application.
- As previously clarified to the submitter, the filling to the west of the Strand Holding Tank was temporary to allow construction of the fence. The fill material and rubbish has subsequently been removed.
- Manhole 4303 has not been inspected. As the CCTV surveys have not shown issues with the upstream manholes, Cork County Council does not intend to survey this line.
- Records do not show an overflow system to the surface water system draining to Williamstown and no overflows are proposed to the Williamstown catchment.
- Any structural defects identified as part of the preliminary report will be addressed as part of the Main Drainage Works.
- The in-filled drainage channel to the north of the Strand Holding Tank is not relevant to this Waste Water Discharge Licence application and the drainage in question does not connect to the sewerage system.
- The drainage channel to the east of the Strand Holding Tank does not connect to the sewerage system and the route of the stream from the upper catchment of Knockaverry through Williamstown is not relevant to this licence application.

Developments to the north of the Williamstown/Upper Strand have included separate sewer systems. These separate systems enter the existing combined sewer close to

the Youghal dog track. The proposals of the Youghal Main Drainage scheme include connection of the storm water to a new storm water sewer along Knockaverry Strand and connection of the foul sewer to the existing overflow sewer from the Strand Holding Tank. This will result in a significant reduction in the hydraulic loading on the main sewer through the property of the submitter. The storage capacity within the Strand Holding Tank will be correspondingly increased such that overflow events will take place a maximum of twice per bathing season, with the overflow being logged and passing via a screen.

Submission No.3: The third submission, received 19th November 2011, includes further information on the specific issues with the waste water works in the vicinity of the residents' private dwelling and a response to some of the points made in the additional information provided by Cork County Council. A significant number of the points raised do not relate directly to the discharges from the waste water works.

The main issues raised in this submission include, concern that:

- The surface water upper and lower outfalls to the Front Strand are also acting as non-compliant SWOs;
- Leakages from the waste water works are entering the surface water network;
- The integrity of the sewer/SWO pipes in the Claycastle/Williamstown area are compromised; and
- Seawater ingress, via the SWOs (SW005 and SW010) and surface water drainage network, is impacting the operation of, and the discharges from, the waste water works.

Response:

It is noted that the submitters, Mr. & Ms. FitzGerald, have raised issues in relation to the spillages/flooding at and in the vicinity of their residence with the Waste Water Thematic Unit of the Office of Environmental Enforcement regularly over recent years (PAE2008/68). Based on the above submissions, and the on-going correspondence on this matter with the OEE, it appears that there is an on-going issues in relation to spillages from the sewer network that need to be addressed as a matter of priority.

Ms. FitzGerald stated, in a telephone conversation in April 2012, that the issue of uncontrolled spillages from the waste water works at their property were on-going periodically and that she did not consider that the Phase 2 Interim works would resolve the issue.

While there has been a significant amount of assessment work carried out in relation to the surface water and waste water network in the Williamstown area, the relationship between surface water drainage issues, non-compliant spillages from the waste water works and tidal influences is not clear. Due to the complex interaction of factors it is difficult to determine the specific measures required to resolve the issue of uncontrolled spillages from the waste water works at this locality. Therefore, **Condition 5** of the RL requires the applicant to complete an assessment within six months of the date of grant of licence to identify the factors contributing to the uncontrolled spillages from the waste water works in the Williamstown/Claycastle area and to identify the priority mitigation/improvement measures/maintenance required to eliminate uncontrolled spillages from the waste water works. The licensee is required within nine months of the date of grant of licence to implement all the appropriate mitigation/improvement measures/maintenance programme measures to eliminate uncontrolled spillages in this area and within twelve months of the date of grant of licence to report on the effectiveness of the mitigation/improvement measures/maintenance programme measures.

In addition, the Youghal Main Drainage works in the Williamstown/Claycastle area, as proposed by Cork County Council, will assist in reducing discharges from the

compliance with the Department of the Environment, Community & Local Government's (DoECLG) guidance on SWOs.

The RL provides for the regulation and control of discharges from the Youghal Waste Water Works, but does not deal with issues in relation to the separated surface water drainage network and surface water infrastructure. These issues are addressed by other mechanisms.

The RL as drafted requires the applicant to ensure that discharges from the waste water works comply with the requirements as specified in the RL. **Condition 5** of the RL requires Cork County Council to submit to the Agency a programme of infrastructural improvements which shall include an assessment of the integrity of the waste water works having regard to: (i) capacity of the waste water works; (ii) leaks from the waste water works; (iii) misconnections between foul sewers and surface water drainage network; (iv) infiltration by surface water; (v) infiltration by groundwater; (vi) such other aspects of the works as may be specified by the Agency.

Condition 5.2(c) and **(d)** requires a programme of improvements which shall include assessment of all storm water overflows and emergency overflows, respectively, associated with the waste water works to determine the effectiveness of their operation and in relation to emergency overflows to minimise the duration and volume of such discharges. **Conditions 3.7** of the RL requires the licensee to ensure that gross solids and litter associated with the discharges do not result in an impairment of, or an interference with, amenities or the environment.

Any discharge that does not comply with the requirements of RL, or any discharge with the potential for environmental contamination of surface water or groundwater, or posing an environmental threat to land shall constitute an incident and shall be notified to the Agency. The reporting of an incident, as a minimum, shall include: the date; time; location; details; nature; cause; extent and ranking of the incident; details on any vulnerable receptors; corrective action taken and plans to prevent a reoccurrence; and the steps taken to minimise any discharges and to carry out any necessary environmental clean-up.

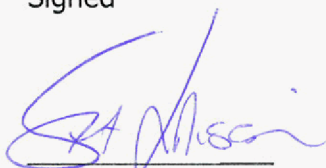
13. Charges

The RL sets an annual charge for the agglomeration at **€6,523.95** and is reflective of the monitoring and enforcement regime being proposed for the agglomeration. No analysis charge has been included in the charges total due to the discharge currently being untreated.

14. Recommendation

I recommend that a Final Licence be issued subject to the conditions and for the reasons as set out in the attached Recommended Licence.

Signed



Stuart Huskisson

Office of Climate, Licensing and Resource Use

Figure 2. Youghal Agglomeration D0139-01 – Discharges and Designated Sites

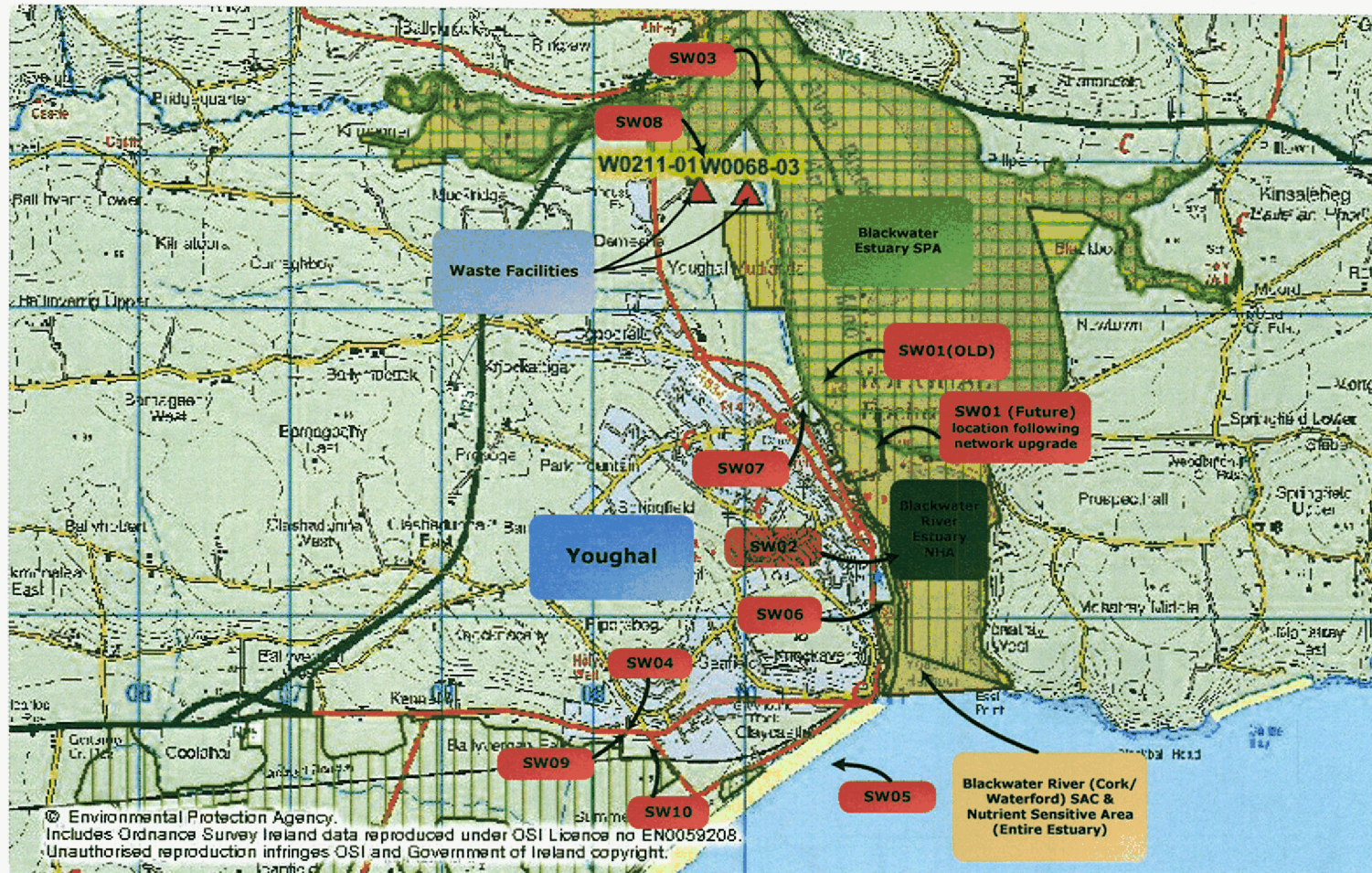


Figure 1. Youghal Agglomeration D0139-01 (boundary highlighted in red)

